Inventory of Time Series of Physical, Chemical, Biological and Fisheries Data from the Eastern North Pacific

M. C. Healey, L. S. Incze, S. Tabata, R. Reed, and W. Pearcy

Department of Fisheries and Oceans
Fisheries Research Branch
Pacific Biological Station
Nanaimo, British Columbia V9R 5K6

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INVENTORY OF TIME SERIES OF PHYSICAL, CHEMICAL, BIOLOGICAL AND FISHERIES DATA FROM THE EASTERN NORTH PACIFIC

by

M. C. Healey, L. S. Incze[1], S. Tabata[2], R. Reed[3], and W. Pearcy[4]

Department of Fisheries and Oceans

Fisheries Research Branch

Pacific Biological Station

Nanaimo, British Columbia, Canada V9R 5K6

[1]College of Ocean and Fishery Sciences
University of Washington
Seattle, WA, U.S.A., 98195
(Current Address: National Oceanographic and Atmospheric Administration
National Marine Fisheries Service, Bldg.4
7600 Sand Pt. Way N.E.
Seattle, WA., U.S.A., 98115)

[2]Department of Fisheries and Oceans
Institute of Ocean Sciences
9860 West Saanich Rd.
Sidney, B.C., Canada V8L 4B2

[3]National Oceanic and Atmospheric Administration
Pacific Marine Environmental Laboratory
7600 Sand Pt. Way N.E.
Seattle, WA, U.S.A. 98115

[4]Oregon State University
College of Oceanography
Corvallis, OR, U.S.A. 97331

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PREFACE

This document was prepared under the auspices of the I.R.I.S. (International Recruitment Investigations in the Subarctic) committee. The I.R.I.S. committee is a group of 20 senior scientists in fisheries and oceanography from the west coast of the United States and Canada. Members of the committee represent university (University of Alaska, University of British Columbia, University of Washington, Oregon State University), state and provincial (AK Dep. of Fish and Game, B.C. Dep. of Environment, OR Dep. Fish and Wildlife), national (Canada Dep. of Fisheries and Oceans, US National Oceanic and Atmospheric Administration), and international (International Pacific Salmon Fisheries Commission (formerly), International Pacific Halibut Commission) agencies. I.R.I.S. was formed several years ago to provide a forum for the exchange of information on fisheries and oceanograpny and a focus for the coordination of research in the North Pacific Ocean.

In 1984 I.R.I.S., with the cooperation of the directors of the institutions involved, created a task team to investigate the advisability of initiating long term monitoring of the physical and chemical oceanography of the North Pacific as a means of providing support for studies of fish productivity. The task team consisted of the authors of this report under the chairmanship of Dr. M. C. Healey. As part of their report to the I.R.I.S. committee the task team submitted an inventory of time series of physical, chemical and biological oceanographic measurements and of fisheries statistics. Because of its inherent value to scientists interested in fisheries oceanography, I.R.I.S. has authorized publication of this inventory in the Technical Report series of the Canadian Department of Fisheries and Oceans.

ABSTRACT

Healey, M. C., L. S. Incze, S. Tabata, R. Reed, and W. Pearcy. 1985. Inventory of time series of physical, chemical, biological and fisheries data from the eastern north Pacific. Can. Tech. Rep. Fish. Aquat. Sci. 1416: 59 p.

Time series of physical and biological oceanographic and fisheries data are listed for Oregon, Washington, British Columbia and Alaska. This report is intended to provide a source reference for researchers interested in relationships between physical and biological oceanographic events and fisheries production.

RÉSUMÉ

Healey, M. C., L. S. Incze, S. Tabata, R. Reed, and W. Pearcy. 1985. Inventory of time series of physical, chemical, biological and fisheries data from the eastern north Pacific. Can. Tech. Rep. Fish. Aquat. Sci. 1416: 59 p.

Une liste de séries chronologiques de données océanographiques physiques et biologiques et de données halieutiques a été établie pour l'Orégon, le Washington, la Colombie-Britannique et l'Alaska. Ce rapport vise à fournir une documentation de base aux chercheurs intéressés par les relations qui existent entre des phénomènes océaniques physiques et biologiques et la production des pêches.

INTRODUCTION

In 1984 the directors of several Pacific coast marine laboratories created an international task team to address two questions: 1) What time series of physical, biological and fisheries data exist which might help relate physical oceanographic conditions to interannual variation in fisheries production; and 2) Would it be appropriate to initiate an oceanographic monitoring project in support of research on the productivity of fish stocks and, if so, what might be the design of such a project? This report addresses the first of these questions, and constitutes an inventory of time series of physical, chemical, biological and fisheries data for the eastern North Pacific Ocean. The report is intended to be a source of time series for researchers interested in investigating relationships among physical and biological parameters in the marine environment. We hope that by identifying what exists and how it may be accessed, researchers will be stimulated to investigate marine biophysical interrelationships in the North Pacific more than they have to date. Furthermore, we hope that the time series identified in this report wil provide some guidance to anyone considering future monitoring in support of fisheries-oceanographic research.

DESCRIPTION OF THE TIME SERIES

To be included in our inventory a time series had to meet the following criteria:

1. Standardized measurements and sampling methodology had to be employed.
2. Samples had to be taken from the same identifiable geographic location throughout the time series.
3. At least 5 years of data had to be available or, if the frequency of sampling was less than annual, 5 sampling periods had to be available.
4. A few time series of less than 5 years duration were included. Some of these had been recently initiated but there was a clear commitment that the series would continue for at least 5 years. Others were complementary to longer time series in the list.

We employed a variety of methods in locating time series. These included personal knowledge of members of the team, personal contacts with colleagues and other researchers, library searches, and questionnaires mailed to research institutions. While we have tried to be as thorough as time would permit we cannot claim to have located all time series which meet our criteria. For example, some laboratories have responded that they have several years of data for a particular locale, but that these data are not presently in an accessible database that can be described. In some instances, laboratories and field stations did not respond within the 6-8 month period we required in order to make this publication timely. However, we believe that

this inventory provides a good introduction to long time series of fisheries and oceanographic data and should increase awareness of existing information that is rarely advertised.

The time series of fisheries data include escapement data for salmon. While strictly speaking these are observations from freshwater rather than marine habitats, escapement data are crucial to any productivity analysis for this important Pacific fisheries resource. We, therefore, included these time series for the benefit of those investigating relationships between ocean conditions and salmonid production.

Information on fishery products produced annually (e.g., cases of canned salmon, barrels of salted fish, etc.) are not listed in the tables. Often these are the only indication of fish landings historically, however, and we recognize that these data may be valuable to some investigators. This kind of information for Canadian fish production may be obtained from reports of the Federal Department of Marine and Fisheries which began in 1868, and Fisheries Statistics of Canada which began in 1917. Both these publications were produced in Ottawa, Canada. Similar information is also contained in the British Columbia Provincial Fishery Reports which began in 1901. Information of this sort can be obtained for U.S. fisheries from Fisheries Statistics of the United States, which began publication in 1942, and, for earlier years, from Fishery Industries of the United States which were included in a series of reports entitled: "Report to the United States Fish Commissioner". The first complete survey of U.S. fisheries was conducted by the U.S. Bureau of Census in 1908.

We did not review the actual data contained in any time series. We, therefore, make no claims regarding the contents of any data series or the quality of the data contained therein. In some instances there exists overlap in the data covered by various time series. We have not attempted to edit these out.

Our collection of information on time series was completed in 1984 and this is the most recent date shown on time series in our lists. Many of the time series have continued into 1985, and will continue in future years.

Time series are listed in tabular form and, in general, the following information is given for each series: 1) Originating country; 2) Station or data series name; 3) Location(s) sampled; 4) Measurements taken; 5) Methods of sampling; 6) Frequency of sampling; 7) Years of record; 8) Data format; 9) Reference source for the time series; and 10) Remarks about the contents of the series. The ordering of the series in the tables is (International series preceed U.S. series preceed Canadian series): physical data, chemical data, phytoplankton and zooplankton, large invertebrates, fishes, marine birds and mammals, miscellaneous.

The time series tables are preceeded by tables that list the abbreviations used. We found it necessary to make considerable use of abbreviations in the tables of time series in order to include all the information in a convenient format. We hope that the use of abbreviations will not make the tables difficult to read. A final table lists addresses of

the agencies referred to in the time series tables from which further information on particular time series can be obtained. Other sources of similar information also exist, but we have credited only those sources from which we actually obtained information.

Some kinds of information which may be considered relevant, such as weather and riverine discharge data are not covered in this inventory. In general, weather records from land stations, marine weather observations from ships of opportunity, and many types of satellite data are available in the U.S. from various laboratories and offices of the National Oceanic and Atmospheric Administration (NOAA). This agency issues numerous publications, but most of the data are available from NOAA, National Climatic Center, Asheville, North Carolina, 28801. Hydrological data (riverine discharge and other information) are published and are available from the U.S. Department of the Interior, U.S. Geological Survey, Office of Water Data Coordination, 417 National Center, Reston, Virginia, 22092. In Canada weather information for British Columbia (temperature, precipitation, solar radiation) is available from Department of Environment, Atmospheric Environment Service, Pacific Region, Suite 700, 1200 West 73rd Ave., Vancouver, British Columbia, V6P 6H9. Hydrological data for British Columbia rivers and streams (discharge, temperature and sediment load) are available from Department of Environment, Water Resources Branch, Room 502, 1001 West Pender St., Vancouver, British Columbia, V6E 2M9. Depending on the time period and information required these data are available on microfiche, hard copy, and punch cards.

We have, no doubt, failed to locate a number of time series which meet our criteria. We would be pleased to receive information from anyone about time series that we have missed. Should we receive sufficient information on time series omited from the report we will prepare an updated version of this report. Correspondence regarding missing time series, with information on the missing time series in a format suitable for inclusion in an updated report, should be directed to M. Healey at the address on the title page.

ACKNOWLEDGMENTS

We would like to acknowledge the contribution of our many colleagues, too numerous to mention by name, who assisted us by providing information on time series. The laboratories, agencies and institutions of these contributions are listed in Table 3. Technical staffs at several of our institutions assisted with compilation of material and with preparation and editing of tables.

CITATIONS IN TABLE 2

Mintel, R. J. and G. B. Smith. 1981. A description of the resource survey data-base system of the Northwest and Alaska Fisheries Center, 1981. NOAA Techn. Mem. NMFS F/NWC-18: 111 p.

Raymond, H. L. 1979. Effects of dams and impoundments on migrations of juvenile chinook salmon and steelhead from the Snake River, 1966-1975. Trans. Amer. Fish. Soc. 108: 505-529.

Smith, R. Z. and R. J. Wahle. 1981. Releases of anadromous salmon and trout from U.S. and Canadian Pacific coast rearing facilities, 1960-1976. NOAA Techn. Mem. NMFS F/NWC-6: 411 p.

Table 1. List of abbreviations used in time series tables.

"Country" to "general area" (columns 1 - 3)

AK	Alaska
B.C.	British Columbia, Canada
CA	California, USA
CAN	Canada
COMM	Commercial
CWT	Coded wire tag
E	East
ESC	Escapement (spawning)
EXP	Exposed
GRD	Groundfish
ID	Idaho
INLT	Inlet
INPFC	International North Pacific Fisheries Commission
IS., ISLS	Islands, Islets
N	North
NE	Northeast
OR	Oregon
PEN	Penninsula
R	River
S	South
SE	Southeast
SIO	Scripps Institute of Oceanography
SND	Sound
ST	Strait
WA	Washington U.S.A.

"Type of observation" to "sample method" (columns 5 - 6)

Atmos	Atmospheric
BIO	Biological
Comp	Composition
C	Cape
CFV#	Vessel license number (Canada)
CHAR	Characteristics
CLOC	Catch location (tagging)
CN	Catch numbers
CPUE	Catch/Unit Effort
CTD	Conductivity-temperature-depth recorder (cast)
CTP	Conductivity-temperature-pressure recorder (cast)
CW	Catch weight
CWT	Coded wire tag
D	Density
EF	Effort
EIT	Engine-intake temperature

Table 1 (cont'd)

"Type of observation" to "sample method" columns (cont'd)

F	Fecundity
FL	Fork length
F/O	Fishery officer (Canada)
Hydro	Hydrographic (oceanographic) casts at standard depths
L	Length
L/F	Length frequency
MBT	Mechanical bathythermograph
NO	Number
NSPN	Number of spawners
O	Dissolved oxygen
Obs	Observations
P	pressure
POP	Population
REL	Release of fish
RLOC	Recapture location (tagging)
RN	Recapture number (tagging)
S	Salinity
SAT	Satellite
SL	Sea level
SPP	Species
SSD	Sea-surface density
SSS	Sea-surface salinity
SST	Sea-surface temperature
STD	Salinity-temperature-depth recorder (cast)
T	Temperature
TS	Thermosalinograph
TURB	Turbidity
VIS	Visibility
W	Weather conditions
WD	Wind (direction, velocity)
WT	Weight
XBT	Expendable bathythermograph

"Data format" to "remarks" (columns 7 - 9)

ADFG	Alaska Department of Fish and Game (USA)
BMS	Bamfield Marine Station (Canada)
CC	Computer cards
CWS	Canadian Wildlife Service (Canada)
CDB	Computer Data Base: includes tape, hard disc, floppy disc and on line storage

Table 1 (cont'd)

"Data format" to "remarks" columns (cont'd)

CFEC	Commercial Fisheries Entry Commission (AK)
CWT	Coded wire tag
DFO	Department of Fisheries and Oceans (Canada)
EIA	Environmental Impact Assessment
EPS	Environmental Protection Service (Canada)
ESB	Enhancement Services Branch (Canada)
ETSD	Environmental & Technical Services Division (USA)
FD	Floppy disk
FNOC	Fleet Numerical Oceanography Center (USA)
FSB	Field Services Branch (Canada)
HC	Hard copy
HMS	Hopkins Marine Station (USA)
INPFC	International North Pacific Fisheries Commission
IOS	Institute of Ocean Sciences (Canada)
IPHC	International Pacific Halibut Commission
JFWAT	Joint (State-Federal) Fish & Wildlife Advisory Team (USA)
MEDS	Marine Environmental Data Center (Canada) (formerly Canadian Oceanographic data Center)
MRB	Marine Resources Branch, Ministry of Environment, B.C. (Canada)
NESS	National Environmental Satellite Service (USA)
NMFS	National Marine Fisheries Service (USA)
NMML	National Marine Mammal Laboratory (USA)
NODC	National Oceanographic Data Center (USA)
NOS	National Ocean Service (USA)
NWAFC	Northwest and Alaska Fisheries Center (Seattle USA)
NWS	National Weather Service (USA)
ODFW	Oregon Department of Fish and Wildlife (USA)
OL	On line
OSU	Oregon State University (USA)
PacFIN	Pacific Fisheries Information Network

Table 1 (cont'd)

"Data format" to "remarks" columns (cont'd)

PBS	Pacific Biological Station, Nanaimo, B.C. (Canada)
PEG	Pacific Environmental Group of NMFS (USA)
PMFC	Pacific Marine Fisheries Commission (USA)
RPEB	Regional Planning + Economics Branch (Canada)
SEP	Salmonid Enhancement Program (Canada)
SIO	Scripps Institution of Oceanography (USA)
SP	Species
STATS	Statistics
USACE	United States Army Corps of Engineers(USA)
USCG	United States Coast Guard (USA)
USFWS	United States Fish and Wildlife Service (USA)
UW	University of Washington (USA)
WDF	Washington Department of Fisheries (USA)

Table 2. Oceanographic and fisheries time series inventory.

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBSERVATION	SAMPLE METHOD	SAMPLING FREQUENCY	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
PHYSICAL TIME SERIES:										
USA	OCEANOGRAPHIC MONTHLY SUMMARY	PACIFIC AND ATLANTIC OCEANS		SST	SHIP-OF-OPPORTUNITY, XBT, SAT. SENSORS	MONTHLY	JAN. 1981-84 (SIMILAR PRODUCT SINCE 1960)	MAPS	NWS/NESS (ALSO NMFS)	CONTINUATION OF EARLIER PRODUCT BY NMFS ENTITLED FISHING INFORMATION.
USA	WIND-STRESS LISTINGS	PACIFIC OCEAN		ATMOS. P., WIND STRESS, STRESS CURL	SHIP OBS.	MONTHLY	1948-84	HC, TAPE	NMFS (PEG)	
USA	TEMP. AT 100 m	PACIFIC OCEAN	(20°-60°N) (COAST-150°W)	T AT 100 M	SHIP OBS.	WEEKLY	1982-84	MAPS	NWS	
USA	NORPAX	PACIFIC OCEAN	(60°N-22°S) (120°W-160°E)	SEA T (XBT)	SHIP-OF-OPPORTUNITY	VARIOUS	1966-80	TAPE	FNOC, NODC	SSS TAKEN DURING SOME PERIODS. MOST OF THE DATA WERE TAKEN BETWEEN SAN FRANCISCO AND HAWAII. SECTION ACROSS CENTRAL EQUATORIAL PACIFIC MONITORED 1972-1980.
USA	TRANSPAC	NORTH PACIFIC	(30°-50°N) (120°W-130°E)	SEA T (XBT)	SHIP-OF-OPPORTUNITY	VARIOUS	1974-84	TAPE	FNOC, NODC	DATA TAKEN ALONG SHIPPING ROUTES. GENERALLY ENOUGH DATA TO COMPILE MONTHLY MAPS.
USA	NOVEMBER	NORTH PACIFIC	(30°N-140°W)	HYDRO, MBT, XBT, SSS	OCEAN WEATHER STATION	VARIOUS	1958-72	TAPE	USCG, NMFS, NWS, NODC	
USA	PHYSICAL OCEANOGRAPHY	CHARLSTON, OR		SST, SSD	BUCKET THERMOMETER HYDROMETER	15-22 DAYS PER MONTH	1971-84	HC	ODFW	SAMPLES FROM OREGON INSTITUTE OF MARINE BIOLOGY PIER, CHARLSTON. SAMPLES TAKEN AT HIGH TIDE.

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	SECTION P-2	NE PACIFIC	(24-54°N) (157°W)	HYDRO, MBT, XBT, SSS	USCG CUTTERS	VARIOUS	1972-79	TAPE	USCG, NODC	16 OCCUPATIONS. OXYGEN ALSO OBSERVED.
USA	SECTION P-3	NE PACIFIC	(21-30°N) (140-157°W)	HYDRO, MBT, XBT, SSS	USCG CUTTERS	VARIOUS	1970-74	TAPE	USCG, NODC	12 OCCUPATIONS.
USA	SECTION P-4	NE PACIFIC	(30-43°N) (124-140°W)	HYDRO, MBT, XBT, SSS	USCG CUTTERS	VARIOUS	1966-73	TAPE	USCG, NODC	21 OCCUPATIONS.
USA	SECTION P-5	NE PACIFIC	(30-38°N) (123-140°W)	HYDRO, MBT, XBT, SSS	USCG CUTTERS	VARIOUS	1966-73	TAPE	USCG, NODC	22 OCCUPATIONS.
USA	SECTION P-6	NE PACIFIC	(30-33°N) (119-140°W)	HYDRO, MBT, XBT, SSS	USCG CUTTERS	VARIOUS	1967-74	TAPE	USCG, NODC	21 OCCUPATIONS.
USA	SECTION P-9	NE PACIFIC	(55°N-) (130-150°W)	HYDRO, MBT, XBT, SSS	USCG CUTTERS	VARIOUS	1974-76	TAPE	USCG, NODC	9 OCCUPATIONS.
USA	MASSACRE BAY (ATTU IS)	ALEUTIAN IS (EXP OCEANIC ISLAND)	(52°50'N,173°12'E)	SL, SST,	TIDE GAUGE	DAILY	1943-75	TAPE	NOS	DENSITY DETERMINED WITH HYDROMETER, DATA ARE INCOMPLETE IN 1970 AND 1971.
USA	NEAR ISLAND BASIN TEMPERATURE	KODIAK ISLAND	(57°47'N,152°23'W)	T	RYAN THERMOGRAPH	CONTINUOUS	1971-84	TAPE	ADFG	

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	SWEEPER COVE (ADAK IS)	ALEUTIAN IS (EXP OCEANIC ISLAND)	(51°51'N,176°39'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1943-84	TAPE	NOS	INCOMPLETE DATA 1957, 1961, 1964, AND 1965.
USA	UNALASKA	ALASKA (EXP OCEANIC ISLAND)	(53°53'N,166°32'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1955-84	TAPE	NOS	DATA AVAILABLE NEARBY (DUTCH HARBOR) 1934-39 AND 1947-1955.
USA	SAND POINT (SHUMAGIN IS)	ALASKA (EXP OCEANIC ISLAND)	(55°20'N,160°30'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1972-84	TAPE	NOS	
USA	WOMENS BAY (KODIAK IS)	ALASKA (EXP OCEANIC ISLAND)	(57°43'N,152°31'W)	SL, SST,	TIDE GAUGE	DAILY	1949-84	TAPE	NOS	1964, 1972-1973 INCOMPLETE. MAJOR LAND RISE DURING 1964 EARTHQUAKE.
USA	SELDOVIA	ALASKA (SEMI-EXP COAST)	(59°26'N,151°43'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1964-84	TAPE	NOS	MISSING DATA 1965 AND 1970.
USA	NIKISHKA	ALASKA (SHELTERED INLAND COAST)	(60°41'N,151°24'N)	SL	TIDE GAUGE	DAILY	1971-84	TAPE	NOS	

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	ANCHORAGE	ALASKA (SHELTERED INLAND COAST)	(61°14'N,149°53'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1966-84	TAPE	NOS	
USA	SEWARD	ALASKA (EXP COAST)	(60°06'N,149°27'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1964-84	TAPE	NOS	CONSIDERABLE MISSING DATA 1974-79.
USA	SEWARD LINE	ALASKA	(58°27'N,148°05'W) (59°27'N,149°28'W)	HYDRO., CTD	RESEARCH VESSEL	VARIOUS	1970-84	TAPE	U OF ALASKA	OCCUPIED SEVERAL TIMES PER YEAR, ESPECIALLY 1974-78. 11 STATIONS USUALLY OCCUPIED.
USA	VALDEZ	ALASKA (EXP COAST)	(61°08'N,146°21'W)	SL	TIDE GAUGE	DAILY	1966-84	TAPE	NOS	
USA	CORDOVA	ALASKA (SEMI-EXP COAST)	(60°33'N,145°46'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1949-84	TAPE	NOS	VIRTUALLY NO DATA 1953-1963.
USA	YAKUTAT	ALASKA (EXP COAST)	(59°33'N,139°44'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1940-84	TAPE	NOS	1964-65, 1973, AND 1979 INCOMPLETE.
USA	SKAGWAY	ALASKA (EXP COAST)	(59°27'N,135°20'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1944-84	TAPE	NOS	CONSIDERABLE MISSING DATA SINCE 1969.

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	JUNEAU	ALASKA (SHELTERED INLAND COAST)	(58°18'N,134°25'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1936-84	TAPE	NOS	1941-43 MISSING.
USA	SITKA	ALASKA (EXP COAST)	(57°03'N,135°20'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1938-84	TAPE	NOS	
USA	KETCHIKAN	ALASKA (SHELTERED INLAND SEAWAY)	(55°20'N, 131°37'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1919-84	TAPE	NOS	INCOMPLETE DATA 1973 AND 1976.
USA	FRIDAY HARBOUR	WA (SHELTERED INLAND WATERWAY)	(48°33'N, 123°00'W)	SL, SST, SSD	TIDE GAUGE, UW OCEANOGRAPHY LABORATORY	DAILY	1934-84	TAPE	NOS/UW	1963-64 INCOMPLETE.
USA	NEAH BAY	WA (SEMI-EXP COAST)	(48°22'N, 124°37'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1934-84	TAPE	NOS	1951, 1959, 1976, AND 1978 INCOMPLETE.
USA	PORT ANGELES	WA (SHELTERED INLAND WATERWAY)	(48°08'N, 123°26'W)	SL	TIDE GAUGE	DAILY	1975-84	TAPE	NOS	
USA	PORT TOWNSEND	WA (SHELTERED INLAND WATERWAY)	(48°09'N, 122°48'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1973-84	TAPE	NOS	

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	CHERRY POINT	WA (SHELTERED INLAND WATERWAY)	(48°52'N,122°45'W)	SL	TIDE GAUGE	DAILY	1971-84	TAPE	NOS	
USA	SEATTLE (ELLIOT BAY)	WA (SHELTERED INLAND WATERWAY)	(47°36'N,122°20'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1899-84	TAPE	NOS	
USA	ASTORIA	OREGON (SHELTERED INLAND WATERWAY)	(46°13'N,123°46'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1925-84	TAPE	NOS	1945-46 INCOMPLETE.
USA	GARIBALDI	OREGON (SEMI-EXP COAST)	(45°34'N,123°55'W)	SL	TIDE GAUGE	DAILY	1970-81	HC, TAPE	OSU	
USA	DEPOE BAY	OREGON (EXP COAST)	(44°48'N,124°04'W)	SL	TIDE GAUGE	DAILY	1972-84	HC, TAPE	OSU/NOS	
USA	NEWPORT LINE	NE PACIFIC	(44°40'N, 124°08'W-) (127°55'W)	HYDRO	RESEARCH CRUISE	VARIOUS	1961-84	HC, TAPE	OSU	TYPICALLY 12 STATIONS. OCCUPIED SEVERAL TIMES PER YEAR 1961-1970, INTERMITTENTLY SINCE 1970.
USA	SOUTHBEACH	OREGON (EXP COAST)	(44°38'N, 124°03'W)	SL, ATMOS P., WINDS	SHORE STATION	DAILY	1967-84	HC, TAPE	OSU/NOS	SST, SSS OBS. SOMETIMES MADE NEARBY. 1983 WINDS MISSING.

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA		TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	CHARLESTON	OREGON (SEMI-EXP COAST)	(43°21'N,124°19'W)	SL	TIDE GAUGE	DAILY	1970-84	HC, TAPE	NOS	SST, SSS, TAKEN NEARBY BY ODFW
USA	PORT ORFORD	OREGON (EXP COAST)	(42°44'N,124°30'W)	SL	TIDE GAUGE	DAILY	1978-84	TAPE	NOS	SEVERAL GAPS IN RECORD.
USA	CRESCENT CITY	CA (EXP COAST)	(41°45'N,124°11'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1933-84	TAPE	NOS	
USA	TRINIDAD	CA (EXP COAST)	(41°04'N,124°09'W)	SL	TIDE GAUGE	DAILY	1976-84	TAPE	NOS	
USA	NORTH SPIT	CA (EXP COAST)	(40°46'N,124°13'W)	SL	TIDE GAUGE	DAILY	1977-84	TAPE	NOS	
USA	PORT CHICAGO	CA (EXP COAST)	(38°03'N,122°02'W)	SL	TIDE GAUGE	DAILY	1976-84	TAPE	NOS	
USA	POINT REYES	CA (EXP COAST)	(38°00'N,122°58'W)	SL	TIDE GAUGE	DAILY	1973-84	TAPE	NOS	
USA	ALAMEDA NAVAL AIR STATION	CA (EXP COAST)	(37°46'N,122°18'W)	SL, SST, SSD	TIDE GAUGE SURFACE WATER SAMPLE	DAILY	1939-84	TAPE	NOS	

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA		TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	SAN FRANCISCO (FORT POINT)	CA (EXP COAST)	(37°48'N,122°28'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1854-1984	TAPE	NOS	LONGEST SERIES. SSD NOT OBSERVED 1855-1877.
USA	SAN MATEO	CA (EXP COAST)	(37°35'N,122°15'W)	SL,	TIDE GAUGE	DAILY	1974-84	TAPE	NOS	
USA	MONTEREY	CA (EXP COAST)	(37°36'N,121°53'W)	SL	TIDE GAUGE	DAILY	1973-84	TAPE	NOS	
USA	PACIFIC GROVE	CA (EXP COAST)	(36°37'N,121°54'W)	SST, SSD	SURFACE SAMPLE	DAILY	1920-84	TAPE	HMS	1940 NO DATA.
USA	AVILA BEACH	CA (EXP COAST)	(35°10'N,120°45'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1945-84	TAPE	NOS	INCOMPLETE YEARS 1952, 1956-1957, 1960-1961, 1963-1965, AND 1975-1977.
USA	RINCON ISLAND	CA (EXP COAST)	(34°21'N,119°27'W)	SL	TIDE GAUGE	DAILY	1962-84	TAPE	NOS	
USA	PORT HUENEME	CA (EXP COAST)	(34°09'N,119°12'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1920-63	TAPE	NOS	
USA	SANTA MONICA	CA (EXP COAST)	(34°00'N,118°30'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1945-84	TAPE	NOS	1965-1968 INCOMPLETE.

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	LOS ANGELES	CA (EXP COAST)	(33°43'N,118°30'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1923-84	TAPE	NOS	1979 INCOMPLETE.
USA	NEWPORT BAY	CA (EXP COAST)	(33°36'N,117°53'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1955-84	TAPE	NOS	1957, 1959, 1965-1966, 1974-76, AND 1978 INCOMPLETE.
USA	SIO PIER LA JOLLA	CA (EXP COAST)	(32°52'N,117°15'W)	SL, SST, SSD	SURFACE SAMPLE	DAILY	1924-84	TAPE	SIO/NOS	1954-55 AND 1978-79 INCOMPLETE.
USA	SIO PIER LA JOLLA	CA (EXP COAST)	(32°52'N,117°15'W)	STD	BOTTOM SAMPLE	DAILY	1927-84	TAPE	SIO	
USA	SAN DIEGO	CA (EXP COAST)	(32°42'N,117°14'W)	SL, SST, SSD	TIDE GAUGE	DAILY	1906-84	TAPE	NOS	1926 AND 1962 INCOMPLETE.
USA	CALCOFI STATIONS	NE PACIFIC (OFF CA)	(18°25'-46°10'N) (COAST TO 137°03'W)	HYDRO, STD, MBT, XBT	RESEARCH VESSEL	1949-1960 MONTHLY; 1961-65 3-MONTHLY; 1966-69 MONTHLY; IRREGULAR THEREAFTER	1949-84	MAG. TAPE	SIO NODC	BIOLOGICAL DATA TAKEN DURING MANY CRUISES. (1949-59 DATA PUB IN OOP; REST IN SIO DATA REPORTS)

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	PAPA	NE PACIFIC	(50°N, 145°W)	HYDRO, STD	WEATHER-SHIPS, RESEARCH VESSELS	ALTERNATE 6-WEEK FOR 6 WEEKS; AT LEAST ONCE-WEEKLY CAST TO 1500 m	1956-81	HC, TAPE	IOS, MEDS, NODC	DURING 1969, 1970, 1971, 1976, 1977, 1979, 1980, AND PART OF 1981 CASTS LESS THAN WEEKLY INTERVALS TAKEN. DURING EACH CRUISE CASTS TO 4200 M TAKEN AT LEAST ONCE. USUALLY ADDITIONAL CASTS TO LESSER DEPTHS TAKEN.
CAN	PAPA	NE PACIFIC	(50°N, 145°W)	MBT, XBT	WEATHER-SHIPS, RESEARCH VESSELS	TWICE DAILY SINCE JAN. 1965	1949-81	HC, APERTURE CARDS, TAPE	SOME EARLIER RECORDS AT SIO; MOST AT MEDS AND NODC	MBT PROGRAM TERMINATED IN NOV. 1979; REPLACED BY TWICE-DAILY STD/CTP CASTS. NOTE: DURING SEPT. 1943 TO DEC. 1949 MBT DATA TAKEN IN GENERAL VICINITY OF PAPA (49°N, 148°W; 47°N, 142°W). NO MBT DURING DEC. 1950-JUNE 1952.
CAN	PAPA	NE PACIFIC	(50°N, 145°W)	SSS	WEATHER-SHIPS, RESEARCH VESSELS	DAILY	1959-81	HC, TAPE	IOS, MEDS	SAMPLES FROM CANVAS BUCKET DURING 1959 MAY HAVE LARGE ERRORS. THOSE DURING 1960-1971 FROM THERMOPLASTIC OR RUBBER BUCKETS HAVE MUCH SMALLER ERRORS. FROM MAY 1972 SAMPLES OBTAINED FROM 3-M DEPTH VIA SEAWATER LOOP.

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	LINE P (6-12 STATIONS)	NE PACIFIC	(48°30'-50°00'N) (125°30'-145°00'W)	HYDRO., STD/CTP	WEATHER-SHIPS, RESEARCH VESSELS	6-WEEKLY	1959-81	HC, TAPE	IOS, MEDS, NODC	SINCE 1968 DUPLICATE STATIONS OFTEN TAKEN (ONE BY OUTBOUND VESSEL, ONE BY INBOUND VESSEL).
CAN	LINE P (6-12 STATIONS)	NE PACIFIC	(48°30'-50°00'N) (125°30'-145°00'W)	MBT, XBT	WEATHER-SHIPS, RESEARCH VESSELS	6-WEEKLY; 2-3 HOURLY OR AT LINE P HYDRO-STATIONS	1952-81	HC, APERTURE CARDS, TAPE	SOME EARLIER RECORDS AT SIO; MOST AT MEDS AND NODC.	DUPLICATE OBSERVATIONS TAKEN FREQUENTLY, ONE BY OUTBOUND VESSEL AND ONE BY INBOUND VESSEL.
CAN	LINE P (6-12 STATIONS)	NE PACIFIC	(48°30'-50°00'N) (125°00'N-145°00'W)	CONTINUOUS EIT, CONT-INUOUS SST AND SSS WITH TS	WEATHER-SHIPS, RESEARCH VESSELS	6-WEEKLY, CONTINUOUS	1959-81	SHIP CHARTS, TAPE	IOS	EIT AVAILABLE SPORADIC-ALLY SINCE 1954. SURFACE BUCKET TEMPERATURE ALSO TAKEN WITH MBT OR XBT SINCE 1952. TS OBSERVATIONS TAKEN IR-REGULARLY 1969-1972. DUPLICATE DATA AVAILABLE ON MANY LINES, ONE FROM OUTBOUND AND ONE FROM INBOUND VESSEL.
CAN	PRINCE RUPERT	B.C. COAST	(54°19'N, 130°20'W)	SL	TIDE GAUGE	DAILY	1909-84	TAPE, HC	MEDS	NUMEROUS GAPS BEFORE 1939

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	LANGARA ISLAND	B.C. (EXP COAST)	(54°15'N,133°03'W)	SST, SSS	SURFACE SAMPLER	DAILY	1936-37; 1940-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS, 1936, 1937, 1940, 1943, 1958, AND 1962 INCOMPLETE. SST NOT OBSERVED OCT. 1969 - DEC. 1970. NO DATA DURING 1938-1939.
CAN	LANGARA POINT	B.C. (EXP COAST)	(54°15'N, 133°02'W)	SL	TIDE GAUGE	DAILY	FEB. 1973 JAN. 1974; 1975-84	HC, TAPE	MEDS	
CAN	TRIPLE ISLAND	B.C. (INLAND SEAWAY)	(54°18'N,130°53'W)	SST, SSS	SURFACE SAMPLER	DAILY	1939-70	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS. NO SST DEC. 1969- DEC. 1970.
CAN	BONILLA ISLAND	B.C. (COASTAL SEAWAY)	(53°30'N, 130°38'W)	SST,SSS	SURFACE SAMPLER	DAILY	1960-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS. SST NOT OBSERVED 1970.
CAN	QUEEN CHARLOTTE CITY	B.C. (SHELTERED COAST)	(53°15'N,132°04'W)	SL	TIDE GAUGE	DAILY	1963-84	HC, TAPE	MEDS	
CAN	MCINNES ISLAND	B.C. (INLAND SEAWAY)	(52°16'N, 128°43'W)	SST,SSS	SURFACE SAMPLER	DAILY	1954-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS. NO SST NOV. 1969 - DEC. 1970.

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	IVORY ISLAND	B.C. (INLAND SEAWAY)	(52°16'N,128°24'W)	SST, SSS	SURFACE SAMPLER	DAILY	1937-55	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS.
CAN	BELLA BELLA	B.C. (SHELTERED COAST)	(52°10'N, 128°09'W)	SL	TIDE GAUGE	DAILY	1961-84	HC, TAPE	MEDS	
CAN	CAPE ST. JAMES	B.C. (EXP COAST)	(51°16'N,131°01'W)	SST, SSS	WEATHER	DAILY	1934-84	HC, TAPE	MEDS	DATA INCOMPLETE OR MISSING DURING MANY YEARS
CAN	EGG ISLAND	B.C. (COASTAL SEAWAY)	(51°15'N, 127°50'W)	SST, SSS	SURFACE SAMPLER	DAILY	1970-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS.
CAN	PINE ISLAND	B.C. (INLAND SEAWAY)	(50°58'N,127°44'W)	SST, SSS	SURFACE SAMPLER	DAILY	1937-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS. 1939, 1953, AND 1969 INCOMPLETE. NO SSS DURING 1970.
CAN	PORT HARDY	B.C. (SHELTERED COAST)	(50°43'N,127°39'W)	SL	TIDE GAUGE	DAILY	1964-84	HC, TAPE	MEDS	
CAN	ALERT BAY	B.C. (SHELTERED COAST)	(50°35'N, 126°57'W)	SL	TIDE GAUGE	DAILY	1948-78	HC, TAPE	MEDS	
CAN	KAINS ISLAND	B.C. (EXP COAST)	(50°27'N,128°02'W)	SST, SSS	SURFACE SAMPLER	DAILY	1935-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS. SSS NOT OBSERVED 1970.

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	NOOTKA	B.C. (EXP COAST)	(49°36'N,126°37'W)	SST, SSS	SURFACE SAMPLERS	DAILY	1934-53	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS. 1939 NOT COMPLETE.
CAN	PORT ALBERNI	B.C. (SHELTERED COAST)	(49°14'N,124°49'W)	SL	TIDE GAUGE	DAILY	1970-84	HC, TAPE		
CAN	TOFINO	B.C. (SEMI-EXP COAST)	(49°10'N,125°55'W)	SL	TIDE GAUGE	DAILY	1910-84	HC, TAPE	MEDS	INCOMPLETE DATA 1916-1917, 1921-1939, 1942, AND 1953.
CAN	AMPHITRITE POINT	B.C. (EXP COAST)	(48°55'N,125°32'W)	SST, SSS	SURFACE SAMPLERS	DAILY	1934-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS. INCOMPLETE 1939, 1951, 1956, 1964, AND 1966. SSS NOT OBSERVED 1970.
CAN	BAMFIELD	B.C. (SEMI-EXP COAST)	(48°50'N,125°08'W)	SL, SST SSS	SURFACE SAMPLERS	DAILY	1969-84	HC, TAPE	MEDS	SOME OBSERVATIONS QUITE IRREGULAR.
CAN	CAPE BEALE	B.C. (SEMI-EXP COAST)	(48°47'N,125°13'W)	SST, SSS	SURFACE SAMPLERS	DAILY	1971-84	HC, TAPE	MEDS	INTERMITTANT OBSERVATIONS LIGHTHOUSE PERSONNEL SAMPLERS.
CAN	PORT RENFREW	B.C. (SEMI-SHELTERED COAST)	(48°33'N,124°25'W)	SL	TIDE GAUGE	DAILY	1968-84	HC, TAPE	MEDS	

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	SHERINGHAM POINT	B.C. (INLAND SEAWAY)	(48°23'N,123°55'W)	SST, SSS	SURFACE SAMPLERS	DAILY	1968-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS. SSS TERMINATED IN 1970.
CAN	SOOKE	B.C. (INLAND SEAWAY)	(48°22'N, 123°44'W)	SL	TIDE GAUGE	DAILY	1958-84	HC, TAPE	MEDS	
CAN	RACE ROCKS	B.C. (INLAND SEAWAY)	(48°18'N,123°32'W)	SST, SSS	SURFACE SAMPLERS	DAILY	1941-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS. SSS NOT OBSERVED IN 1970.
CAN	WILLIAM HEAD	B.C. (INLAND SEAWAY)	(48°20'N, 123°32'W)	SST, SSS	QUARANTINE STATION, SURFACE SAMPLERS.	DAILY	1921-40	HC, TAPE	MEDS	SEVERAL DATA GAPS.
CAN	VICTORIA	B.C. (SEMI-SHELTERED)	(48°26'N, 123°22'W)	SL	TIDE GAUGE	DAILY	1909-84	HC, TAPE	MEDS	INCOMPLETE 1933-1934.
CAN	PATRICIA BAY	ST OF GEORGIA	(48°39'N,123°27'W)	SL	TIDE GAUGE	DAILY	1976-84	HC, TAPE	MEDS	
CAN	FULFORD HARBOUR	ST OF GEORGIA	(48°46'N,123°27'W)	SL	TIDE GAUGE	DAILY	1951-84	HC, TAPE	MEDS	
CAN	EAST POINT	ST OF GEORGIA	(48°47'N,123°03'W)	SST, SSS	SURFACE SAMPLERS	DAILY	1953-68	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS.

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	ACTIVE PASS	ST OF GEORGIA	(48°52'N,123°17'W)	SST, SSS	SURFACE SAMPLE	DAILY	1967-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS. TWICE-DAILY UNTIL 1970.
CAN	TSAWWASSEN	ST OF GEORGIA	(49°00'N,123°08'W)	SL	TIDE GAUGE	DAILY	1967-84	HC, TAPE	MEDS	
CAN	STEVESTON	ST OF GEORGIA	(49°08'N,123°11'W)	SL	TIDE GAUGE	DAILY	1969-84	HC, TAPE	MEDS	MISCL. MEASUREMENTS MADE 1919-1934; MAX. AND MIN. ELEVATIONS ONLY 1933-1969
CAN	NEW WEST-MINSTER	ST OF GEORGIA	(49°12'N,122°56'W)	SL	TIDE GAUGE	DAILY	1969-84	HC, TAPE	MEDS	SST OBSERVATIONS MADE NEARBY 1927-1969.
CAN	DEPARTURE BAY	ST OF GEORGIA	(49°13'N,123°57'W)	SST, SSS	SURFACE SAMPLE	DAILY	1914-84	HC, TAPE	MEDS	SOME INCOMPLETE DATA.
CAN	ENTRANCE ISLAND	ST OF GEORGIA	(49°13'N,123°48'W)	SST, SSS	SURFACE SAMPLE	DAILY	1936-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS.
CAN	VANCOUVER	ST OF GEORGIA	(49°17'N,123°07'W)	SL	TIDE GAUGE	DAILY	1910-84	HC, TAPE	MEDS	
CAN	POINT ATKINSON	ST OF GEORGIA	(49°20'N,123°15'W)	SL	TIDE GAUGE	DAILY	1914-84	HC, TAPE	MEDS	NO DATA 1920, JUNE 1922 - DEC. 1926, 1928-1932, 1934, AND 1936.
CAN	CHROME ISLAND	ST OF GEORGIA	(49°28'N,124°41'W)	SST, SSS	SURFACE SAMPLE	DAILY	1961-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS.

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA		TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	SISTERS ISLAND	ST OF GEORGIA	(49°29'N,124°26'W)	SST, SSS	SURFACE SAMPLE	DAILY	1968-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS.
CAN	CAPE MUDGE	B.C. (SHELTERED COAST)	(50°00'N,125°12'W)	SST, SSS	SURFACE SAMPLE	DAILY	1937-84	HC, TAPE	MEDS	LIGHTHOUSE PERSONNEL SAMPLERS. INCOMPLETE DATA IN 1940, 1942, 1962, 1969, AND 1970.
CAN	CAMPBELL RIVER	B.C. (SHELTERED COAST)	(50°01'N,125°14'W)	SL	TIDE GAUGE	DAILY	1965-68 1972-84	HC, TAPE	MEDS	
CHEMICAL TIME SERIES:										
USA	PUGET SOUND WATER PROPERTIES	INLETS IN SOUTHERN PUGET SOUND, WA		CHLOROPHYLL, NUTRIENTS (N,P),O,S,T, ^{14}C	BOTTLE CASTS	MONTHLY, 10-12 MONTHS PER YEAR	1964-70	HC	WDF	SOME PHYTOPLANKTON COUNTS; 3 OR MORE STATIONS PER BAY, 2 DEPTHS PER STATION; SOMETIMES 2 SAMPLINGS PER MONTH
USA	QUILCENE BAY WATER PROPERTIES	QUILCENE BAY, HOOD CANAL, WA		CHLOROPHYLL, NUTRIENTS (N,P),O,S, ^{14}C	BOTTLE CASTS	MONTHLY, 10-12 MONTHS PER YEAR	1964-70	HC	WDF	3 STATIONS IN INNER BAY 2 DEPTHS SAMPLED
USA	WILLIPA BAY WATER PROPERTIES	WILLIPA BAY, SW WASHINGTON COAST		CHLOROPHYLL, NUTRIENTS (N,P), O,S,T	BOTTLE CASTS	MONTHLY, 4-8 PER YEAR	1962-66	HC	WDF	11-18 STATIONS SAMPLED AT SEVERAL DEPTHS

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN[a]	PAPA	NE PACIFIC	(50°N, 145°W)	ATM CO_2	WEATHERSHIP	WEEKLY OR TWICE/WK	1969-81	HC, TAPE	DFO, IOS	PUBLISHED, OPEN
CAN	PAPA	NE PACIFIC	(50°N,145°W)	NUTRIENTS (SURFACE + SOME SUBSURFACE)	WEATHERSHIP	WEEKLY	1970-81	HC	DFO, IOS	MANUSCRIPT IN PREPARATION UNPUBLISHED DATA
CAN	PAPA	NE PACIFIC	(50°N,145°W)	PCO_2 (SURFACE)	WEATHERSHIP	MONTHLY	1977-81	RAW DATA	DFO, IOS	UNVERIFIED PENDING CALIBRATION TO WMO STANDARDS, U.D. UNPROCESSED
CAN	PAPA	NE PACIFIC	(50°N,145°W)	TOTAL CO_2/ ALKALINITY (PROFILE)	WEATHERSHIP	VARIOUS	1977-81	RAW DATA	DFO, IOS	UNPROCESSED
CAN	PAPA	NE PACIFIC	(50°N,145°W)	PRIMARY PRODUCTIVITY	RESEARCH CRUISE	2-3 PER YEAR	1984	DATA SHEET	DFO, IOS	STARTING, U.D.
CAN	PAPA	NE PACIFIC	(50°N,145°W)	TOTAL CO_2 ALAKALINITY	RESEARCH CRUISE	2-3 PER YEAR	1982-84	RAW DATA	DFO, IOS	UNPROCESSED SAMPLES
CAN	PAPA	NE PACIFIC	(50°N,145°W)	NUTRIENTS (PROFILE)	RESEARCH CRUISE	2-3 PER YEAR	1982-84	RAW DATA	DFO, IOS	UNVERIFIED, U.D.

[a]Hydrographic casts listed in the physical time series for station PAPA also provided some chemical data. Dissolved oxygen was measured in most casts and other parameter were measured as follows: 1) phosphates, 1956-59; 2) pH, 1956; 3) alkalinity, 1956; 4) nitrates, 1956; 5) nitrites 1956-60; 6) silicates, 1958-61.

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
PHYTOPLANKTON & ZOOPLANKTON TIME SERIES:										
USA	PLANKTON TOWS FOR ALL SPAWNING ESC SURVEYS	PUGET SOUND		SETTLED VOLUME	1/2 METER 333 μ HORIZONTAL DAYTIME TOWS	WEEKLY OR BIMONTHLY	1977-84	HC	WDF	UNPUBLISHED TABLES
USA	ZOOPLANKTON	OFF NEWPORT, OREGON		NO,SPP	BONGO NET	1-2/MTH	1969-72	HC,CC	OSU	BONGO NET = 20 CM DIA. CONTACT C. B. MILLER COLLEGE OF OCEANOGRAPHY
USA	ZOOPLANKTON	YAQUINA BAY	(44°40' N,124°W)	NO,SPP	PLANKTON NET	WEEKLY	1963-70	HC,CC	OSU	ICHTHYOPLANKTON DATA ALSO INCLUDED, CONTACT C. B. MILLER, COLLEGE OF OCEANOGRAPHY
USA	MESO-PELAGIC FISH, SHRIMP, SQUID	OFF NEWPORT, OREGON		NO,SPP,L, AGE,SEX, EF	MIDWATER TRAWL	MONTHLY	1962-67	HC	OSU	RESEARCH CRUISES 28-300 KM OFFSHORE COLLEGE OF OCEANOGRAPHY CONTACT W. PEARCY
CAN	PLANKTON	JUAN DE FUCA ST	(48°20' N, 24°W)	SPP,CN,T, D,O,S	RESEARCH CRUISE	SUMMER, VARIOUS	1978-84	TAPE,HC	DFO, IOS	PHYTOPL. AND ZOOPL.
CAN	PLANKTON	B.C. COAST		SPP,T,W,S, CHLOROPHYLL	RESEARCH CRUISE	6/YR	1979-84	TAPE,HC	DFO, IOS	PHYTOPL. AND ZOOPL. MOST SAMPLES IN SUMMER
CAN	PLANKTON	PAPA	(50°N, 145°W)	SPP,WT,D	RESEARCH CRUISE	DAILY	1956-80	TAPE,HC	DFO, FBS, IOS	PRE 1969 SAMPLED IN SIX WEEK CYCLES

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
INVERTEBRATE TIME SERIES:										
INPFC	KING CRAB TAG RECOV.	E BERING SEA		CN,REL, CLOC,RLOC	TRAWL, TRAP	VARIOUS	1955-63	HC	INPFC BULL. 24	CARAPACE LENGTH
USA	COMM SQUID	NEWPORT, COOS BAY OREGON		WT,L,AGE, SEX,EF, MATURITY	SEINE, TRAWL	APR-JUL	1983-84	HC, DISC	ODFW, NEWPORT	LANDING STATS LOGBOOK PORT SAMPLING SP = LOLIGO OPALESCENS
USA	BERING SEA CRABS	BERING SEA		NO,SIZE,SEX, SHELL CONDITION,EGG CLUTCH SIZE AND CONDITION; BY SPECIES	BOTTOM TRAWL	ANNUAL	1970-84	CDB	NMFS, KODIAK	SOME DATA AVAILABLE PRIOR TO 1970
USA	KODIAK CRAB SURVEYS	KODIAK ISLAND AREA		SPP,SIZE,SEX, F,DISTRIBUTION	POTS-AT FIXED LOCATIONS	JUNE-AUGUST	1972-84	CDB	ADFG, KODIAK	
USA	SAND POINT CRAB SURVEYS	SHUMAGIN ISLANDS,AK		SPP,SIZE,SEX, F,DISTRIBUTION	POTS-AT FIXED LOCATIONS	JUNE-JULY	1974-84	CDB	ADFG, KODIAK	
USA	DUTCH HARBOR CRAB SURVEYS	UNALASKA ISLAND,AK		SPP,SIZE,SEX, F,DISTRIBUTION	POTS-AT FIXED LOCATIONS	JUNE-AUGUST	1975-77, 1979-81, 1983,1984	CDB	ADFG, KODIAK	
USA	ADAK CRAB SURVEYS	ADAK ISLAND,AK		SPP,SIZE,SEX, F,DISTRIBUTION	POTS-AT FIXED LOCATIONS	SUMMER AND FALL	1975-77	CDB	ADFG, KODIAK	

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	NORTON SOUND CRAB SURVEYS	NE BERING SEA, NORTON SOUND		SPP, SIZE, SEX, F, DISTRIBUTION	POTS-AT FIXED LOCATIONS	JULY	1980-82	CDB	ADFG, KODIAK	
USA	KODIAK CRAB/ GROUNDFISH SURVEYS	N SHELIKOF STRAIT AK		SPP, SIZE, SEX, NO, CLUTCH CONDITION, DISTRIBUTION	BOTTOM TRAWL	ANNUAL, JUNE-AUGUST	1980-84	CDB	ADFG, KODIAK	SURFACE AND BOTTOM TEMPERATURE NOTED
USA	AK PEN. CRAB	SUTWIK IS TO SBMIDI IS	(56°30' N, 157°W)	SPP, SIZE, SEX, NO, CLUTCH CONDITION, DISTRIBUTION,	BOTTOM TRAWL	ANNUAL, JUNE-AUGUST	1981-84	CDB	ADFG, KODIAK	SURFACE AND BOTTOM TEMPERATURE NOTED
USA	CANCER MAGISTER	OREGON COAST		WT, L, SEX	TRAPS	DEC-SEPT	1945-84	HC	ODFW, NEWPORT	LANDING STATS, PORT SAMPLING
USA	GULF OF AK PINK SHRIMP	PAULOF BAY	(55°30' N, 161°35' W)	NO, SIZE, SEX, YEAR-CLASS STRENGTH	MIDWATER TRAWL	ANNUAL	1977-84	CDB	NMFS, KODIAK; ADFG	XBT DATA COLLECTED, PANDALUS BOREALIS
USA	GULF OF AK PINK SHRIMP	SHUMAGIN ISLANDS	(55°N, 160°W)	NO, SIZE, SEX, YEAR-CLASS STRENGTH	MIDWATER TRAWL	ANNUAL	1972-79	CDB	NMFS, KODIAK; ADFG	XBT DATA COLLECTED, PANDALUS BOREALIS
USA	KODIAK SHRIMP SURVEYS	KODIAK ISLAND, ALASKA		SPP, SIZE, SEX, NO, DISTRIBUTION	BOTTOM TRAWL	SPRING AND FALL SURVEYS	1970-84	CDB	ADFG, KODIAK	SURVEYS MOSTLY IN PRODUCTIVE BAYS, SOME XBT DATA COLLECTED
USA	S. PEN. SHRIMP SURVEYS	S COAST OF ALASKA PENINSULA		SPP, SIZE, SEX, NO, DISTRIBUTION	BOTTOM TRAWL	SPRING AND FALL SURVEYS	1974-84	CDB	ADFG, KODIAK	SURVEYS MOSTLY IN PRODUCTIVE BAYS, SOME XBT DATA COLLECTED

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	HOOD CANAL SHRIMP	HOOD CANAL, WA		CPUE	POTS	ANNUALLY	1976-84	DATA SHEETS	WDF	6 SITES SAMPLED
USA	PINK SHRIMP	OREGON COAST		WT,NO, SPP,EF	TRAWL	MAR-OCT	1958-84	HC, DISC	ODFW, NEWPORT	LANDING STATS, LOGBOOK. NUMBERS FROM 1966 ON.
USA	PINK SHRIMP	OREGON COAST		L,AGE,SEX	TRAWL	MONTHLY MAR-OCT	1951-84	HC, DISC	ODFW, NEWPORT	PORT SAMPLING
USA	DABOB BAY OYSTER LARVAE	DABOB BAY,HOOD CANAL,WA		NO,T	PLANKTON NET,BT	3-7 DAYS PER WEEK JULY-SEPT	1966-84	HC	WDF	4-10 STATIONS SAMPLED AT 1 DEPTH
USA	WEATHER-VANE SCALLOP	NEWPORT, COOS BAY, TILLAMOOK, OREGON		WT,L,AGE, SEX,EF	DREDGE, CATCH STATS.	2-4/YR	1981-84	HC, DISC	ODFW, NEWPORT	LANDING STATS,LOGBOOK, PORT SAMPING, SP = PATINOPECTIN CAURINUS
USA	RAZOR CLAM	OREGON COAST		WT,L,AGE, SPP	RESEARCH CRUISE	MAR-SEPT	1955-84	HC	ODFW, NEWPORT	ALSO LANDING STATS
CAN	CRAB DATA	B.C. NORTH COAST		L	RESEARCH CRUISE	VARIOUS	1947-84	TAPE, HC	DFO,PBS	CANCER MAGISTER CARAPACE WIDTH
CAN	SHRIMP/ PRAWN	B.C. COAST		CW,EF,D	LOGBOOK	DAILY	1973-84	TAPE, HC	DFO,PBS	SHELLFISH COMMERCIAL FISHERY
CAN	SHRIMP/ PRAWN	B.C. COAST		L,SEX, SPP(2)	COMM CATCH SAMPLING	VARIOUS	1981-84	TAPE, HC	DFO,PBS	SHELLFISH COMMERCIAL FISHERY MONITORING

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	SHRIMP/ PRAWN	B.C. COAST		CW,EF,D, CPUE	LOGBOOK	VARIOUS	1973-84	TAPE, HC	DFO,PBS	TRAP TYPE, BAIT AND NO. RECORDED
CAN	PRAWN	B.C. COAST		L,SEX	COMM CATCH SAMPLING	VARIOUS	1978-84	TAPE, HC	DFO,PBS	SHELLFISH COMMERCIAL FISHERY MONITORING
CAN	PRAWN	KNIGHT + KINGCOME INLET	(51°N,125°W)	L,SEX	RESEARCH CRUISE	VARIOUS	1973-82	TAPE, HC	DFO,PBS	PANDALUS PLATYCEROS VIA PRAWN TRAPS
CAN	PRAWN	B.C. COAST		CW,EF	LOGBOOK	VARIOUS	1979-84	TAPE, HC	DFO,PBS	P. PLATYCEROS VIA PRAWN TRAPS
CAN	SHRIMP	B.C. COAST		L,SEX, NO./KG	RESEARCH CRUISE	MAY &/OR SEPT	1973-84	TAPE, HC	DFO,PBS	P. JORDANI VIA SHRIMP TRAWLS
CAN	SHRIMP	B.C. COAST		CW,CN,T, D,TOW L,	RESEARCH CRUISE	MAY &/OR SEPT	1973-84	TAPE, HC	DFO,PBS	P. JORDANI VIA SHRIMP TRAWLS
CAN	INTERTIDAL CLAMS	SEAL IS, ST OF GEORGIA	(49°30'N,124°50'W)	WT,L,AGE, SPP(4)	QUADRATS IN 25 YD GRID	YEARLY TO 1950 THEN TRIENNIAL	1940-82	TAPE	DFO,PBS	SAMPLING IN SUMMER
CAN	GEODUCK	B.C. COAST		CW,EF	LOGBOOK	DAILY	1978-84	TAPE, HC	DFO,PBS	SHELLFISH COMMERCIAL FISHERY
CAN	OYSTER BREEDING DATA	PENDRELL SOUND	(50°N,124°45'W)	SPP,F,S,T, TIDES	CATCH SAMPLE	ANNUAL (SUMMER)	1950-80	TAPE, HC	DFO,PBS	ALL BIVALVES, STARFISH, PLANKTON SAMPLED

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	OYSTER SPAWN	PENDRELL SND PIPESTEM INLT	(50°N, 124°45'W) (49°N, 125°20'W)	NO, L, AGE, F, D, WT, WD, T	CATCH SAMPLE	ANNUAL (SUMMER)	1949-84	HC	MRB, B.C. ENVIRON	CRASSOSTREA GIGAS
CAN	OYSTER	B.C. COAST		NO, L, AGE, WT, D, TIDE, PARASITES	CATCH SAMPLE	ANNUAL (VARIOUS)	1966-84	HC	MRB, B.C. ENVIRON.	CRASSOSTREA GIGAS (WILD STOCKS)
CAN	OYSTER CATCH	B.C. COAST		WT, NO, PRICE	LANDING STATS	ANNUAL (VARIOUS)	1960-84	DISC, HC	MRB, B.C. ENVIRON.	C. GIGAS
FISHERIES TIME SERIES:										
INPFC	GRD. FISH SHRIMP HERRING CATCH	N PACIFIC BERING SEA		CN, EF, SPP	LANDING STATS	VARIOUS	1971-76	HC	INPFC BULL. 41	COMM FISHERY BY GILLNET, TRAWL, LONGLINE
INPFC	STATS. YEARBOOK	N PACIFIC		CN, EF, SPP, GEAR	LANDING STATS	VARIOUS	1952-84	HC	INPFC YEARBOOK	VARIETY OF FISH SPECIES
INPFC	JAPANESE SALMON CATCH	N PACIFIC		CN, EF, SPP. (5)	LOGBOOK/ LANDING STATS	MAY-AUG	1956-70	HC	INPFC	ATLAS OF CATCH + FISHING EFFORT, JAPANESE MOTHER-SHIP SALMON FISHERY
INPFC	JAPANESE SOCKEYE CATCH	N PACIFIC		CN, AGE, PARASITES, STOCK ORIGIN	LANDING STATS	JUN-JUL (WEEKLY)	1956-70	HC	INPFC	BRISTOL BAY SOCKEYE CATCH BY JAPANESE MOTHER SHIP FISHERY

TABLE 2 (CONT'D)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	GROUNDFISH SURVEYS	BERING SEA		NO, SIZE, SEX; BY SPECIES OR OTHER TAXONOMIC GROUPING	BOTTOM TRAWL	ANNUAL	1971-84	CDB	NMFS	INCLUDES BOTTOM AND NEAR-BOTTOM FISH AND EPIBENTHIC INVERTEBRATES CRABS ARE RECORDED SEPARATELY. SEE MINTEL AND SMITH (1981). XBT DATA.
USA	GROUNDFISH SURVEYS	GULF OF AK AND ALEUTIAN IS		NO, SIZE, SEX; BY SPECIES OR OTHER TAXONOMIC GROUPING	BOTTOM TRAWL	TRIENNIAL	1980, 1983-84	CDB	NMFS, SEATTLE	PLANS ARE TO CONTINUE SURVEYS EVERY THIRD YEAR. SEE MINTEL AND SMITH (1981). XBT DATA
USA	GROUNDFISH SURVEYS	KODIAK IS SUTWIK IS TO SEMIDI IS		NO, SIZE, SEX; BY SPECIES OR OTHER TAXONOMIC GROUPING	BOTTOM TRAWL	ANNUAL JUNE-AUGUST	1980-84	CDB	ADFG, KODIAK	SURFACE & BOTTOM TEMPERATURE NOTED
USA	HAKE SURVEYS	OREGON, WASHINGTON		NO, SIZE, AGE, SEX, CONDITION	BOTTOM TRAWL, MIDWATER TRAWL, HYDRO-ACOUSTICS	GENERALLY TRIENNIAL	1974, 1975, 1977, 1980 1983	CDB	NMFS, SEATTLE	MERLUCCIUS PRODUCTUS TRIENNIAL SURVEYS PLANNED
USA	ROCKFISH ASSESSMENT	OREGON, WASHINGTON		NO, SIZE, AGE, SEX	BOTTOM TRAWL, MIDWATER TRAWL, HYDRO-ACOUSTICS	GENERALLY TRIENNIAL	1977, 1980, 1983, 1984	CDB	NMFS, SEATTLE	INCLUDES BIOLOGICAL CHARACTERISTICS AND INCIDENTAL CATCH TRIENNIAL SURVEYS PLANNED

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	WEST COAST FLATFISH	OREGON, WASHINGTON		NO,SIZE,SEX; BY SPECIES	BOTTOM TRAWL	VARIABLE	1971-74, 1977,1979, 1980,1983	CDB	NMFS, SEATTLE	1971-1974 FROM ODFW SURVEYS; SUBSEQUENT DATA FROM SURVEYS NOT DIRECTED SPECIFICALLY AT FLATFISH. TRIENNIAL SURVEYS PLANNED
USA	ALASKAN FISH LANDINGS	ALASKA		WT, NO,VALUE $, VESSEL SIZE	LANDING STATS PORT SAMPLING	DAILY, ALL YEAR	1976-84	CDB	CFEC	RAW DATA CONSIST OF INDIVIDUAL LANDINGS WHICH ARE CONFIDENTIAL AND PROTECTED BY ALASKAN LAW; AGGREGATED DATA ARE AVAILABLE UPON REQUEST ONLY
USA	PUGET SOUND ENGLISH SOLE	PUGET SOUND, WA	(47-49°N) (122-125°W)	L,AGE,SEX, MATURITY	CATCH SAMPLE	VARIABLE	1950-84	CDB	WDF	SP.=PAROPHYS VETULUS
USA	PUGET SOUND WALLEYE POLLOCK	PUGET SOUND, WA	(47-49°N) (122-125°W)	L,AGE,SEX	RECREATIONAL CATCH SAMPLE	VARIABLE	1978-84	CDB	WDF	SP.=THERAGRA CHALCOGRAMMA
USA	PUGET SOUND LINGCOD	PUGET SOUND, WA	(47-49°N) (122-125°W)	L,AGE,SEX	COMMERCIAL RECREATIONAL	VARIABLE	1978-84	CDB	WDF	SP.=OPHIODON ELONGATUS

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	PUGET SOUND PACIFIC COD	PUGET SOUND, WA	(47-49°N) (122-125°W)	L,SEX	COMMERCIAL RECREATIONAL CATCH SAMPLE	VARIABLE	1958-84	CDB	WDF	SP.=GADUS MACROCEPHALUS
USA	PORT SUSAN HAKE	PORT SUSAN, PUGET SOUND,WA	(48°N,122°W)	L,AGE,SEX, MATURITY	CATCH SAMPLE	SEASONAL, JAN-MAR	1967-84	CDB	WDF	REPORTS AVAILABLE SP.=MERLUCCIUS PRODUCTUS
USA	PORT SUSAN HAKE-BIOMASS	PORT SUSAN, PUGET SOUND,WA	(48°N,122°W)	BIOMASS	HYDRO-ACOUSTIC SURVEY	SEASONAL, JAN-MAR	1972-84	CDB	WDF	REPORTS AVAILABLE
USA	PUGET SOUND RECREATIONAL AND GNDFISHERIES	PUGET SOUND,WA	(47-49°N) (122-125°W)	SPP,L	RECREATIONAL CATCH SAMPLE	VARIABLE	1975-84	CDB	WDF	
USA	WHITE STURGEON SPORT CATCH	LOWER COLUMBIA RIVER, OREGON		CN,L,AGE, SEX,EF, SPP	LANDING STATS	ANNUAL FEB-OCT	1969-84	HC, TAPE	ODFW, CLACKAMAS	SOME DATA FROM CATCH SAMPLING CONTACT STEVE KING
USA	GRD FISH SPORT FISHERY	OREGON COAST		CN,SPP,L, SEX,AGE,EF	LANDING STATS	JAN-DEC	1979-84	HC, TAPE	ODFW, NEWPORT	DATA ALSO COLLECTED VIA PORT SAMPLING CONTACT JERRY BUTLER

TABLE 2 (CONT'D)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	GRD FISH COMM CATCH	OREGON COAST		CW, SPP, EF	LOGBOOK	VARIOUS	1973-84	TAPE	ODFW, NEWPORT	NO DATA FOR 1974. CONTACT JIM GOLDEN
USA	ROCKFISH	OREGON COAST		WT, NO, SPP	PORT SAMPLING	VARIOUS	1967-84	HC, DISC TAPE	ODFW, NEWPORT	CONTACT JIM GOLDEN
USA	GRD FISH MARKET SAMPLING	OREGON COAST		WT, NO, L, AGE, SEX, SPP	PORT SAMPLING	VARIOUS	1940-84	HC, CC, TAPE	ODFW, NEWPORT	CONTACT JIM GOLDEN
USA	FLATFISH	WA, OR COAST		WT, NO, SPP, L, AGE, SEX	TRAWL SURVEY	ANNUAL (SEPT)	1971-76	HC	ODFW, NEWPORT	CAPE BLANCO, OR TO CAPE FLATHERY, WA.
USA	WEST COAST SLOPE SURVEYS	OREGON WASHINGTON		NO, SIZE, SEX; BY SPECIES	BOTTOM TRAWL		1984	CDB	NMFS, SEATTLE	TARGETS FLATFISH AND SABLEFISH; PLANNED FOR REGULAR SAMPLING, PROB. EVERY 3rd YEAR
USA	SHELIKOF STRAIT POLLOCK	SHELIKOF STRAIT, AK		SIZE, SEX, CONDITION, ABUNDANCE OF MATURE YEAR CLASSES	HYDRO-ACOUSTICS AND MIDWATER TRAWLS	ANNUAL	1980, 1981 1983, 1984	HC	NMFS, SEATTLE	RESULTS ARE PUBLISHED IN: ANNUAL REPORT ON CONDITION OF GROUNDFISH RESOURCES OF THE GULF OF ALASKA REGION (IN-HOUSE DOCUMENT)

TABLE 2 (CONT'D)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	FOREIGN REPORTED CATCH	BERING SEA, NE PACIFIC		CW BY SPECIES BY NATION: 1)BY 1/2° LAT x 1°LONG. AREAS; AND 2)BY VESSEL BY INPFC STATISTICAL AREA	REPORTS OF FOREIGN NATIONS	1)ANNUAL SUMMARIES 2)WEEKLY	1)1964-84 (JAPAN) 1977-84 (ALL NATIONS) 2)1977-84	CDB	NMFS, SEATTLE	
USA	OBSERVER DATA OF FOREIGN FISHING	BERING SEA, GULF OF AK, U.S. WEST COAST		CW BY SPECIES BY STATISTICAL AREA; L/F,L,W,T, AGE OF SELECTED SPECIES; CATCH; PRODUCT RECOVERY RATES	CATCH SAMPLING	YEAR-ROUND	1977-84	CDB	NMFS, SEATTLE	
USA	PACIFIC FISHERIES MANAGEMENT DATA BASE	U.S. WEST COAST AND ALASKA		CW VALUE $	LANDING STATS, PORT SAMPLING	YEAR-ROUND	1981-84	CDB	PACFIN OFFICE PMFC	DATABASE IS USED FOR MANAGEMENT OF THE FISHERIES.
USA	KUSKOKWIM AREA HERRING	E BERING SEA COASTAL AREAS FROM CAPE NEWENHAM TO CHINIGYAK CAPE		SPAWN ASSESSMENT, BIOMASS ESTIMATE, DISTRIBUTION, SEASONAL MOVEMENT AND TIMING	AERIAL SURVEY	ANNUAL	1978-84	CDB	ADFG, ANCHORAGE	

TABLE 2 (CONT'D)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	CAPE ROMANZOF HERRING	E BERING SEA COASTAL AREAS FROM KOKECHIK BAY TO KUN R.	(61°43'-61°54'N) (165°37'-166°08'W)	SPAWN ASSESSMENT, BIOMASS ESTIMATE, DISTRIBUTION, SEASONAL MOVEMENT AND TIMING	AERIAL SURVEY	ANNUAL	1978-84	CDB	ADFG, ANCHORAGE	
USA	NORTON SOUND HERRING	NE BERING SEA COASTAL AREAS FROM CAPE STEBBINS TO CAPE PRINCE OF WALES		SPAWN ASSESSMENT, BIOMASS ESTIMATE, DISTRIBUTION, SEASONAL MOVEMENT AND TIMING	AERIAL SURVEY	ANNUAL	1978-84	CDB	ADFG, ANCHORAGE	
USA	KOTZEBUE DISTRICT HERRING	CHUKCHI SEA COASTAL AREAS FROM CAPE PRINCE OF WALES TO CAPE KRUSENSTERN		SPAWN ASSESSMENT, BIOMASS ESTIMATE, DISTRIBUTION, SEASONAL MOVEMENT AND TIMING	AERIAL SURVEY	ANNUAL	1978-81	CDB	ADFG, ANCHORAGE	
USA	SHAD, SMELT	COLUMBIA+ SANDY R OREGON		L,AGE,SEX, WT,ROE WT	CATCH SAMPLING	VARIOUS	1970-84	HC	ODFW	SHAD - COLUMBIA R. SMELT - SANDY R. CONTACT WAYNE BOWERS

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	PACIFIC HERRING CATCH	OREGON COAST		CW,SPP,L, AGE,SEX	SEINE LANDINGS	JAN-AUG	1979-84	HC	ODFW, NEWPORT	LANDING STATS PORT SAMPLING. CONTACT JERRY BUTLER
USA	SECURITY COVE TEST FISHING	E BERING SEA	(58°41'30"N, 161°54'00"W)	HERRING, CAPELIN, INCIDENTAL SPP.: NO, TIMING, DISTRIBUTION, AGE,SEX,L, MATURITY,WT, SKEIN WT	VARIABLE MESH SET GILLNETS	DAILY AS WEATHER PERMITS DURING HERRING SPAWNING MIGRATION	1978, 1980-84	CDB	ADFG, ANCHORAGE	ADFG INFORM. LEAFLET #187; ADFG TECH. DATA REPTS #61,74,78,79,84, 105. ARCTIC-YUKON-KUSKOKWIM ANNUAL HERRING REPT. SER. ALSO: AIR AND NEARSHORE SEA SURFACE TEMP.,ESTIMATED WIND SPEED AND DIRECTION, PERCENT CLOUD COVER, SECCHI DEPTH RECORDED ON FIELD DATA SHEETS
USA	GOODNEWS BAY HERRING	E BERING SEA	(59°03'N,161°49'W)	HERRING, CAPELIN, INCIDENTAL SPP.: NO, TIMING, DISTRIBUTION, AGE,SEX,SIZE, MATURITY,WT, SKEIN WT	VARIABLE MESH SET GILLNETS	DAILY DURING HERRING SPAWNING MIGRATION	1979-84	CDB	ADFG, ANCHORAGE	

TABLE 2 (CONT'D)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	NELSON IS HERRING	NELSON IS E BERING SEA	(60°40'N,164°45'W)	HERRING, CAPELIN, INCIDENTAL SPP.: NO, TIMING, DISTRIBUTION, AGE,SEX,L, MATURITY,WT, SKEIN WT	VARIABLE MESH SET GILLNETS	DAILY DURING HERRING SPAWNING MIGRATION	1978-79, 1981-82, 1984	CDB	ADFG, ANCHORAGE	
USA	CAPE DENBIGH HERRING	NE BERING SEA,NORTON SOUND AK	(64°23'N,161°32'W)	HERRING, CAPELIN, INCIDENTAL SPP, NO, TIMING, DISTRIBUTION, AGE,SEX,SIZE, MATURITY,WT, SKEIN WT	VARIABLE MESH SET GILLNETS	DAILY DURING HERRING SPAWNING MIGRATION	1978-84	CDB	ADFG, ANCHORAGE	
USA	HERRING SPAWNING ESCAPEMENT	SE ST OF GEORGIA	(48°40'-49°00'N) (122°34'-123°10'W)	SPAWN DISTRIBUTION AND INTENSITY	DRAG-RAKE	SEMI-WEEKLY APR-MAY	1973-84	HC	WDF	UNPUBLISHED TABLES; PROG. REP. SUMMARIES
USA	HERRING SPAWNING ESCAPEMENT	PUGET SOUND	(47°00'-48°40'N) (122°20'-123°10'W)	SPAWN DISTRIBUTION AND INTENSITY	DRAG-RAKE	VARIABLE BY SPAWNING GROUND JAN-MAR	1973-84	HC	WDF	UNPUBLISHED TABLES

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	HERRING POPULATION BIOLOGICAL DATA	SE ST OF GEORGIA	(48°40'-49°00'N) (122°35'-123°10'W)	AGE,L,WT,SEX, MATURITY	MID-WATER TRAWL	3-14 DAY INTERVALS APR-MAY	1976-84	TAPE	WDF	
USA	HERRING POPULATION BIOLOGICAL DATA	PUGET SOUND	(47°00'-48°40'N) (122°20'-123°10'W)	AGE,L,WT,SEX MATURITY	MID-WATER TRAWL	VARIABLE BETWEEN YEARS AND SUBAREAS	1972-84	TAPE	WDF	
USA	HERRING ROE FISHERY BIOLOGICAL DATA	SE ST OF GEORGIA	(48°40'-49°00'N) (122°35'-123°10'W)	AGE,L,WT,SEX MATURITY	CATCH SAMPLING	VARIABLE BETWEEN WEEKS APR-MAY	1973-84	TAPE	WDF	
USA	HERRING ALL-PURPOSE FISHERY BIOLOGICAL DATA	BELLING-HAM BAY	(48°30'-48°45'N) (122°25'-122°40'W)	AGE,L,WT,SEX MATURITY	CATCH SAMPLING	VARIABLE BETWEEN YEARS NOV-FEB	1972-83	TAPE	WDF	NO SAMPLING 1976
USA	BERING SEA HALIBUT RECRUITMENT	BERING SEA	(58°00'-54°30'N) (159°00'-166°00'W)	POPULATION ESTIMATE BOTTOM T	BOTTOM TRAWL	ANNUAL	1963, 1965-82	TAPE, HC	IPHC	EXTENDED COVERAGE JUNE-AUG 1963 AND 1965 SCI. REP. 62 IPHC TECH REP. 1,3,7,11,20
USA	GULF OF ALASKA HALIBUT TRAWL SURVEY	UNIMAK PASS TO CAPE SPENCER	(53°39'N,165°00'W)	POPULATION DISTRIBUTION BOTTOM T	BOTTOM TRAWL	VARIABLE	1961-63	HC	IPHC	IPHC SCI. REP. 36

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	GULF OF ALASKA HALIBUT RECRUITMENT	SOUTH OF UNIMAK IS ALASKA	(54°36'-53°45'N) (163°30'-164°45'W)	POPULATION ESTIMATE BOTTOM T	BOTTOM TRAWL	ANNUAL	1966-84	TAPE, HC	IPHC	INCOMPLETE BOTTOM T 1966-79 INCOMPLETE COVERAGE 1966, 1967, 1968, 1970, 1971. 1980-84 DATA NOT PUBLISHED STATIONS OCCUPIED TWICE IN 1984. EXTENTED COVERAGE 1980-82
USA	GULF OF ALASKA HALIBUT RECRUITMENT	CHIROKOF ISLAND, AKASKA	(56°45'-55°54'N) (154°15'-156°00'W)	POPULATION ESTIMATE BOTTOM T	BOTTOM TRAWL	ANNUAL	1966-75, 1979-84	TAPE, HC	IPHC	INCOMPLETE BOTTOM T 1966-79 INCOMPLETE COVERAGE 1966, 1967, 1970. 1980-84 DATA NOT PUBLISHED. STATIONS OCCUPIED TWICE IN 1984
USA	GULF OF ALASKA HALIBUT RECRUITMENT	CHINIAK, ALASKA	(58°30'-56°51'N) (151°00'-152°15'W)	POPULATION ESTIMATE BOTTOM T	BOTTOM TRAWL	ANNUAL	JULY 1967-84 EXC. 1969, 1972	TAPE, HC	IPHC	INCOMPLETE BOTTOM T 1966-79 INCOMPLETE COVERAGE 1970. 1980-84 DATA NOT PUBLISHED STATIONS OCCUPIED TWICE IN 1984.
USA	GULF OF ALASKA HALIBUT RECRUITMENT	CAPE ST. ELIAS, ALASKA	(60°06'-59°54'N) (144°30'-146°30'W)	POPULATION ESTIMATE BOTTOM T	BOTTOM TRAWL	ANNUAL	1966-68, 1970-84	TAPE, HC	IPHC	INCOMPLETE BOTTOM T 1966-79 INCOMPLETE COVERAGE 1970. 1980-84 DATA NOT PUBLISHED STATIONS OCCUPIED TWICE IN 1984
USA	GULF OF ALASKA HALIBUT RECRUITMENT	SHELIKOF BAY, ALASKA	(57°10'N, 135°45'W)	POPULATION ESTIMATE BOTTOM T	BOTTOM TRAWL	ANNUAL	1966-84, EXC. 1971	TAPE, HC	IPHC	INCOMPLETE BOTTOM T 1966-79 1980-84 DATA NOT PUBLISHED

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	KODIAK ADULT HALIBUT	PORTLOCK-ALBATROSS BANKS AK		POPULATION ESTIMATE BIOLOGICAL SAMPLE	LONGLINE	ANNUAL	1963-64 1976-84	TAPE, HC	IPHC	DATA THROUGH 1979 ARE SUMMARIZED IN IPHC TECH. REP. 18
USA	SOUTHEAST ALASKA ADULT HALIBUT	SE ALASKA		POPULATION ESTIMATE BIOLOGICAL SAMPLE	LONGLINE	ANNUAL	1982-84	TAPE	IPHC	
USA	FISH MIGRATION	COLUMBIA RIVER		NO,SPP	VISUAL COUNTS	HOURLY MAR-DEC	1938-84	HC	USACE	UPSTREAM MIGRATION OF ALL SALMONIDS, SHAD AND LAMPREY PAST BONNEVILLE AND McNARY DAMS, COLUMBIA RIVER
USA	SALMON ESCAPEMENT	COLUMBIA RIVER HATCHERIES		NO,SPP,AGE	HATCHERY RETURNS/ RELEASES	ANNUAL	1980-84	HC	NMFS	CONTACT BOB VREELAND
USA	SALMONID COMPOSITION/ ABUNDANCE	JONES BEACH, OREGON		WT,NO,SPP, L,AGE,SEX, EF,TIDE,T, FLOW,TURB,	BEACH+ PURSE SEINE	DAILY APR-AUG, MONTHLY ALL OTHERS	1977-83	TAPE	NMFS	MARK/RECOVERY DATA INCLUDED
USA	PELAGIC FISH	OREGON COAST		NO,SPP,L, EF,SEX	PURSE SEINE	VARIOUS MAY-SEPT	1979-84	HC, DISC	OSU	SALMONIDS AND OTHERS SAMPLED FROM 50M CONTOUR TO 20KM OFFSHORE CONTACT W. PEARCY

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	SALMONID ESCAPEMENT	ODFW HATCH-ERIES		RN,WT,SPP, L/F,RLOC, CWT,L	SMOLT RELEASE/ ADULT RETURNS	SEASONAL	1978-84	DISC	ODFW PORTLAND	SMOLT RELEASE SAMPLED THROUGHOUT. ADULTS SAMPLED LAST 2 YRS. CONTACT TOM LICHATOWICH.
USA	SALMONID TAGGING	OREGON COAST		SPP	CWT RECOV.	VARIOUS	1979-84	CC	PMFC	OCEAN/RIVER RECOVERIES
USA	SALMON SPORTFISH CATCH	LOWER COLUMBIA RIVER		CN,L,AGE, SEX,EF, CWT	LANDING STATS, CATCH SAMPLING	ANNUAL FEB-MAY	1969-84	HC, TAPE	ODFW CLACKAMAS	CONTACT STEVE KING
USA	CHINOOK, COHO,CHUM, STURGEON	COLUMBIA RIVER		WT,L,AGE, SEX,	PORT SAMPLING	SEASONAL	1960-84	TAPE, CC	ODFW CLACKAMAS	CHINOOK SPAWNING COLOR ALSO RECORDED. CONTACT PAUL HIROSE
USA	CHINOOK, COHO,PINK, COMM CATCH	OREGON COAST		CW,CN,SPP, EF,AGE	LANDING STATS, PORT SAMPLING	SEASONAL MAY-NOV	1952-84	DISC	ODFW NEWPORT	COMMERCIAL TROLL. CONTACT ROBERT McQUEEN
USA	BRISTOL BAY SALMON	SE BERING SEA		NO,TIMING, DISTRIBUTION	GILLNETS	DAILY, 10 JUNE TO 10 JULY	1968-73, 1975	CDB	ADFG, ANCHORAGE	PRELIMINARY ANALYSES REPORTED IN ADFG DOCUMENTS 11 STATIONS ON TRANSECT FROM PORT MOLLER TO CAPE NEWENHAM

Table 2 (cont'd)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	ANNUAL SALMONID ESCAPEMENT	ALASKA, IDAHO, WASHINGTON OREGON, NORTHERN CALIFORNIA	SOUTHERN MOST POINT 38°01'N	NSPN BY SPP; SOME STEELHEAD AND REDD COUNTS	VARIABLE	VARIABLE	1908-84	CDB	USFWS	DATA BASE PROVIDES A SINGLE NUMBER FOR ANNUAL ESCAPEMENT FROM 953 BODIES OF WATER; THERE PRESENTLY ARE 20,550 RECORDS. A USER MANUAL IS PLANNED. DATA SOURCES INCL ADFG,WDF,CDFW. PERIOD OF RECORD DEPENDS ON PARTICULAR MEASUREMENT
USA	HIGH SEAS SALMON	PACIFIC OCEAN	(43°-58°N)	NO,L,WT,AGE, SEX,MATURITY, GONAD WT, INCIDENTAL CATCH	SURFACE GILLNET	YEAR-ROUND	1955-72	CDB	NMFS, SEATTLE	DATA REPORTED BY LAT. AND LONG. OF SAMPLE; INCIDENTAL CATCH REPORTED AS SPECIES AND NUMBER
USA	SALMONID ESCAPEMENT	PRINCE WILLIAM SOUND, AK		NSPN	AERIAL AND GROUND SURVEY	WEEKLY, JUNE-SEPT	1960-84	CDB	ADFG, CORDOVA	AERIAL SURVEYS CONDUCTED ON ABOUT 200 STREAMS; GROUND SURVEYS ON ABOUT 1/2 OF THESE. IRREGULAR SURVEYS EXTEND BACK TO 1920
USA	SALMONID ESCAPEMENT	INDEX STREAMS OF COPPER R. DELTA AND BERING R. SYSTEMS, AK		NSPN	AERIAL AND GROUND SURVEY	VARIABLE, DURING ESCAPE-MENT	1960-84	CDB	ADFG, CORDOVA	

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	SALMONID ESCAPEMENT	ESHAMY R., PRINCE WILLIAM SOUND, AK		NSPN	WEIR COUNTS	DAILY, JUNE-SEPT	1960-84	CDB	ADFG, CORDOVA	
USA	SALMONID ESCAPEMENT	COGHILL R, PRINCE WILLIAM SOUND, AK		NSPN	VARIABLE PRIOR TO 1974; WEIR COUNTS 1974-84	DAILY, JUNE, JULY	1974-84	CDB	ADFG, CORDOVA	UNPUBLISHED RECORDS PRIOR TO 1974
USA	PRE-EMERGENT SALMONID FRY INDICES	PRINCE WILLIAM SOUND, AK		EGG AND FRY NO.	VARIABLE	ANNUAL	1960-84	CDB	ADFG, CORDOVA	AT LEAST 25 STREAMS EXAMINED PER YEAR, UP TO 44 IN SOME YEARS; EARLY, MIDDLE AND LATE ESCAPEMENT STREAMS ARE SAMPLED
USA	AGE COMPOSITION, CHUM SALMON	PRINCE WILLIAM SOUND, AK		AGE COMP	SCALES COMMERICAL CATCH AND ESCAPEMENT SAMPLING	VARIABLE	1964-84	MOSTLY TAPE, SOME DATA SHEETS	ADFG, CORDOVA	FEW DATA FOR SOME YEARS
USA	SALMONID ESCAPEMENT	SE AK (YAKITAT TO DIXON ENTRANCE)		NSPN PER STREAM	AERIAL AND FOOT SURVEYS	VARIABLE	1960-84	CDB	ADFG, DOUGLAS	ABOUT 5000-6000 RECORDS PER YEAR, CONCENTRATING ON MAJOR STREAMS
USA	PRE-EMERGENT FRY DENSITY	SE AK		EGG AND FRY NO/m^2	QUADRAT SAMPLING OF STREAMBED	ANNUAL FEB-MAR	1966-84	CDB	ADFG, DOUGLAS	DATABASE NOW INCLUDES ANNUAL DATA FROM MULTIPLE SITES IN 48 STREAMS

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA AND CAN	HATCHERY RELEASE DATA	AK,B.C., WA,OR,ID.		SPP,REL SITE REL NO.,WT, REL DATE BY FACILITY	AGENCY RECORDS	DAILY THROUGH RELEASE PERIOD	1960-82	CDB	ETSD/ NMFS	SEE SMITH AND WAHLE (1981). DATA INCOMPLETE 1980-82
USA	KUSKOKWIM AREA SALMON	E BERING SEA,C. NEWENHAM TO NASKONET PEN., DRAINAGES INTO KUSKOKWIM B. AK		SALMON, INCIDENTAL SPP, TIMING, SPAWNING AGE, SEX,SIZE,GEAR EFFICIENCY, NO, F	VARIOUS	VARIABLE, BEGINNING WITH DAILY FOR SOME SAMPLING METHODS	1959-84	CDB, DATA SHEETS	ADFG, ANCHORAGE	KUSKOKWIM AREA ANN. MGMT. RPTS.,KUSKOKWIN AREA ANN. RES. RPTS., ADFG TECH. DATA REP.111. ALSO,WATER AND AIR TEMP. AND ESTIMATED WIND SPEED DIRECTION
USA	YUKON AREA SALMON	YUKON R. DRAINAGE AK		SALMON, INCIDENTAL SPP, TIMING, SPAWNING AGE, SEX,SIZE,GEAR EFFICIENCY, NO, F	VARIOUS	VARIABLE, BEGINNING WITH DAILY FOR SOME SAMPLING METHODS	1959-84	CDB, DATA SHEETS	ADFG, ANCHORAGE	MGMT RPTS.; YUKON AREA ANN. RES. RPTS.; JFWAT RPTS.; ADFG TECH. DATA RPTS. 89,90,119,121; ADGF INFORMATION LEAFLETS 194,208,212, 224,226,239
USA	NORTON SOUND-KOTZEBUE AREA SALMON	NORTON AND KOTZEBUE SOUNDS AND DRAINAGES NE BERING SEA		SALMON, INCIDENTAL SPP, TIMING, SPAWNING AGE, SEX,SIZE,GEAR EFFICIENCY, NO, F	VARIOUS	VARIABLE, BEGINNING WITH DAILY FOR SOME SAMPLING METHODS	1959-84	CDB, DATA SHEETS	ADFG, ANCHORAGE	NORTON SOUND-KOTZEBUE ANN. MGMT. AND RES. REP. SER.; ADFG INFORMATION LEAFLETS 198,203-238 p.

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	SNAKE RIVER SALMON AND STEELHEAD RUNS	COLUMBIA R BASIN		NO SMOLTS NO ADULTS ADULTS/SMOLTS BY BROOD	MARK AND RECAPTURE	DAILY THROUGHOUT MIGRATION	1966-84	TAPE 1976-84; HC 1966-75	NMFS, SEATTLE	SEE RAYMOND (1979)
USA	UPPER COLUMBIA SALMON AND STEELHEAD RUNS	COLUMBIA R BASIN		NO SMOLTS NO ADULTS ADULTS/SMOLTS BY BROOD	MARK AND RECAPTURE	DAILY THROUGHOUT	1966-84	DATA SHEET	NMFS, SEATTLE	
USA	FISH PASSAGE COLUMBIA AND SNAKE RIVERS	COLUMBIA R BASIN		NO SALMON AND STEELHEAD AT DAMS	ACTUAL COUNTS	DAILY, MAR-DEC	1938-84	TAPE, HC	USACE	DATA AVAILABLE IN ANNUAL FISH PASSAGE REPORTS
USA	COLUMBIA RIVER FISH RUNS AND FISHERIES	COLUMBIA R BASIN		POPULATION ESTIMATE, RUN AND ESCAPE-MENT, SALMON AND STEELHEAD	DAM COUNTS	ANNUAL	1938-84	HC	ODFW, WDF	DATA AVAILABLE IN ANNUAL REPORTS
USA	COLUMBIA RIVER JUVENILE SALMON AND STEELHEAD	COLUMBIA ESTUARY (JONES BEACH)	(46°9'N,123°18'W)	MIGRATION TIME SURVIVAL	BEACH AND PURSE SEINE	DAILY DURING MIGRATION	1966-83	TAPE	NMFS, SEATTLE	
USA	SPRING CHINOOK	WOODY ISLANDS, COLUMBIA RIVER		L, AGE, SEX,	LOGBOOKS	EVEN DAYS APR	1957-84	HC	ODFW, CLACKAMAS	BY GILLNET FISHERY TEMPERATURE AND VISIBILITY ALSO RECORDED

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	CHUM SALMON	OREGON COAST		L,AGE,SEX	CATCH SAMPLING, FOOT SURVEYS	NOV,DEC	1947-82	HC	ODFW, CORVALLIS	1948;51-58;76-81 NOT SAMPLED CONTACT ALAN MCGIE
USA	SPRING CHINOOK SALMON CATCH	COLUMBIA RIVER + TRIBS.		CN,L,AGE, SEX	PORT SAMPLING	ANNUAL	1978-84	HC, TAPE	ODFW, CLACKAMAS	SAMPLE SPORT + COMM. FISHERIES + HATCHERY RECOVERIES
USA	COHO SALMON	OREGON COAST		L,SCALES, CWT,RLOC	PORT SAMPLING	SEASONAL DAILY	1978-84	HC, TAPE	ODFW, CORVALLIS	SPORT AND COMM. FISHERIES CONTACT LISA VAN DYKE
USA	COHO, CHINOOK SALMON CATCH	OREGON COAST		CN,SPP,L, EF	PORT SAMPLING	MAY-SEPT, DAILY	1966-84	HC,DISC, CC,TAPE	ODFW, NEWPORT	SPORT AND COMM. FISHERIES. PUNCH CAN SYSTEM BY OR 1981. CONTACT LAIMONS OSIS
USA	SPRING CHINOOK SPORTFISH CATCH	COLUMBIA RIVER TRIBUTARIES		CW,CN,SPP, L,AGE,CWT, EF	LANDING STATS	ANNUAL FEB-JUN	1946-84	HC, TAPE	ODFW, CLACKAMAS	LOWER WILLAMETTE AND CLACKAMAS RIVERS. CONTACT DON BENNETT
USA	COHO SALMON CWT RECOV.	ODFW HATCH-ERIES		L,AGE,SEX, CWT	HATCHERY RETURNS	ANNUAL	1980-84	HC, TAPE	ODFW, PORTLAND	CONTACT LIN ROBERTS
USA	JUVENILE CHINOOK SALMON	OREGON COASTAL ESTUARIES		NO,FL	BEACH SEINE	SEPT	1978-84	HC	ODFW, CORVALLIS	CONTACT JAY NICHOLAS

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
USA	JUVENILE COHO SALMON	LOWER COLUMBIA RIVER		L,SEX	SEINE	ANNUAL JULY	1972-84	HC	ODFW, CLACKAMAS	ALSO INDEX COUNTS FOR COHO AND OTHER SALMONIDS CONTACT PAUL HIROSE
USA	SPRING/FALL CHINOOK, COHO, STEELHEAD SPAWN DATA	COLUMBIA RIVER		L,AGE,SEX, REDD COUNT	FOOT SURVEY	ANNUAL SPAWNING SEASON	1957-84	HC	ODFW, CLACKAMAS	CONTACT PAUL HIROSE
USA	FALL CHINOOK SALMON	ELK RIVER, OREGON		NO,AGE, SEX,F,L/F, SCALES	SURVEY, CATCH SAMPLING	VARIOUS	1968-82	HC	ODFW, CORVALLIS	COMPARISON OF HATCHERY TO WILD STOCKS CONTACT JAY NICHOLAS
USA	SPRING/FALL CHINOOK, STEELHEAD SPAWNING	DESCHUTES + JOHN DAY RIVERS, OREGON		EF,L,AGE, SCALES, REDD COUNT	SPAWNING GROUND SURVEY CREEL CENSUS TRAPPING, NETTING	SEASONAL	1978-84	HC, DISC	ODFW, MADRAS	POP. ESTIMATES, MIGRATION AND LIFE LIFE HISTORY INCLUDED. REDD COUNTS SINCE 1959. CONTACT BOB LINSAY
USA	FALL CHINOOK, COHO, CHUM SPAWNING	OREGON COAST RIVERS		SPAWN COUNT	SPAWNING GROUND SURVEY	12-14 VISITS PER STREAM OCT TO FEB	1950-84	HC, TAPE	ODFW, CORVALLIS	COUNTS IN INDEX SECTIONS OF VARIABLE LENGTH. CONTACT ALAN MCGIE/BOB GARRISON
USA	COHO SALMON SPAWN	OREGON COAST RIVERS		SPAWN COUNT	SPWN GRD SURVEY	8-14 VISIT SEP TO FEB	1981-84	TAPE	ODFW, CORVALLIS	TOTAL SPAWNERS/MILE ESTIMATED. CENSUS IN INDEX SECTIONS OF STREAMS CONTACT ALAN MCGIE

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	GRD FISH CATCH	B.C. COAST		CN, L, AGE SEX, SPP(4)	CATCH SAMPLING/ RESEARCH CRUISE	2-4/yr	1977-83	TAPE	DFO, PBS	
CAN	GRD FISH CATCH	B.C. COAST		SPP, CPUE GEAR, AREAS	LOGBOOK	VARIOUS	1954-84	OL, HC, TAPE,	DFO, PBS	
CAN	FLATFISH	B.C. COAST		CW, CN, L, SEX, AGE, SPP	CATCH SAMPLING/ RESEARCH CRUISE	VARIOUS	1955-84	TAPE	DFO, PBS	
CAN	PACIFIC COD	B.C. COAST		AGE, L	CATCH SAMPLING/ RESEARCH CRUISE	VARIOUS	1956-84	OL, HC, TAPE	DFO, PBS	
CAN	GRD FISH BIOLOGY	B.C. COAST		CW, CN, L, AGE, SEX, F, EF, D, T, PARASITES, SPP(4)	LANDING STATS, LOGBOOK, CATCH SAMPLING	VARIOUS	1976-84	OL, HC, TAPE	DFO, PBS	GEAR AND METHODS ALSO RECORDED
CAN	ROCKFISH	B.C. COAST		CN, EF, L, AGE, SEX, CW, SPP	CATCH SAMPLING/ RESERCH CRUISE	VARIOUS	1963-84	TAPE, HC	DFO, PBS	MATURITY DATA INCLUDED
CAN	ROCKSOLE TAG RECOV.	B.C. COAST		CN, NR, SEX, AGE, REL, L, CLOC, RLOC	CATCH SAMPLING	VARIOUS	1944-66	HC	DFO, PBS	

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	OCEAN PERCH	B.C. COAST		EF,CN,WT	LANDING STATS	VARIOUS	1965-76	HC	DFO,PBS	CATCH FIGURES QUATERLY GEAR: TRAWL
CAN	HERRING	B.C. COAST		WT,L,AGE,SEX MATURITY, GONAD WT, SCALES	GILLNET, SEINE, TRAWL	VARIOUS	1945-84	TAPE, OL	DFO, PBS	CATCH SAMPLING + RESEARCH CRUISES
CAN	HERRING SPAWN	B.C. COAST		ROE DENSITY, SUBSTRATE	F/O REPORTS	JAN-JUN	1950-67 1970-84	TAPE, OL	DFO, PBS	START + END OF SPAWN RECORDED
CAN	HERRING CATCH	B.C. COAST		CN	LANDING STATS	WEEKY	1950-67 1970-84	OL	DFO, PBS	TYPE-ROE,REDUCTION, FOOD AND BAIT
CAN	CHARLOTTE ADULT HALIBUT	HECATE STRAIT, QUEEN CHARLOTTE SOUND		POPULATION ESTIMATE BIOLOGICAL SAMPLE	LONGLINE	ANNUAL	1965, 1966, 1976-78, 1980-84	TAPE, HC	IPHC	DATA THROUGH 1978 ARE SUMMARIZED IN IPHC TECH. REP. 18
CAN	SALMON BIOLOGY	B.C. COAST		WT,L,SEX, AGE,SCALES, PRICE, SPP(5)	CATCH SAMPLING/ RESEARCH CRUISE	SEASONAL	1957-72	TAPE, HC	DFO,PBS	EXP LONGLINE CATCH DATA
CAN	SALMON CATCH	B.C. COAST		CN,CW,EF, PRICE, SPP(5)	LANDING STATS	SEASONAL	1951-84	OL	DFO,PBS	GEAR:GILLNET,TROLL SEINE
CAN	SALMON CATCH	B.C. COAST		CW,CN,EF, PRICE,CFV#, SPP(5)	LANDING STATS	SEASONAL	1967-84	OL	DFO,PBS	CATCH AND CFV # RECORDED FOR EACH BOAT

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	SALMON ESCAPEMENT	B.C. COAST		NSPN, STREAM CHAR, SPP(6)	F/O REPORTS	AUG-JAN	1925-84	OL	DFO,PBS	DATA POINTS RECORDED BY B.C. WATERSHED NUMBER
CAN	SALMON CWT RECOV.	EAST N PACIF.		CW,L,AGE, RLOC, SPP(5)	HEAD RECOVERY	SEASONAL	1975-84	TAPE	DFO,CWT STATS UNIT	HATCHERY,STOCK,TAGGING: SIZE,TIME,AND DATE ALSO RECORDED
CAN	SALMON CWT RECOV.	B.C. COAST		CW,L,AGE, SEX,F, SPP(4)	HATCHERY RETURN	SEASONAL	1974-84	TAPE, HC	DFO,SEP	HATCHERY RETURNS OF COHO,CHINOOK,STEELHEAD, CHUM
CAN	SALMON HATCHERY	B.C. COAST		CW,L,AGE, SPP(5)	HATCHERY SAMPLING	VARIOUS	1980-84	TAPE, FD	DFO,SEP	
CAN	SEP RELEASE SUMMARY	B.C. COAST		REL,RLOC, NO TAGGED, SPP(7)	ENHANCE-MENT RELEASES	ANNUALLY	1972-84	TAPE	DFO,SEP	ALSO RELEASE WEIGHT, DATE RECORDED FOR CHUM, PINK,CHINOOK,COHO, SOCKEYE,STEELHEAD, CUTTHROAT
CAN	SEP BROOD SUMMARIES	B.C. COAST		REL,F, SPP(6)	HATCHERY RETURN	SEASONAL	1971-84	TAPE, HC	DFO,SEP	ALSO RELEASE DATE,AND SIZE; TAG CODE,FIN AND CWT AND NO. OF FRY PONDED
CAN	SALMON PORT SAMPLING	ST OF GEORGIA	(49°N,122°30')	CN,CW,EF, L,REL, SCALES, SPP(2)	PORT INTERVIEW	JUL-AUG (DAILY)	1983-84	TAPE	DFO,PBS	COMMERCIAL CATCH OF CHINOOK AND COHO

Table 2 (cont'd)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	SALMON SCALE COLLECTION	B.C. COAST		NO,AGE,WT, SEX,L, SPP(ALL)	CATCH SAMPLING	VARIOUS	1947-84	TAPE, OL	DFO,RPEB	
CAN	BABINE L. DEVELOPMENT (SOCKEYE)	FULTON R PINKUIT CK. B.C.		NO,L,WT, AGE,SEX,F, T,%UNSPWNED	VARIOUS	N/A	1961-77	HC	DFO,ESB	SAMPLED VIA FRY TRAP, HYDRAULICS + AIRLIFT AT SPAWNING CHANNELS
CAN	CATCH STATS	B.C. COAST		CW,CN,EF, PRICE,REL SPP.	LANDING STATS	VARIOUS	1951-84	TAPE, OL, HC	DFO,FSB	FOR ALL SALMON,HALIBUT, GROUNDFISH AND SHELLFISH
CAN	SPORTFISH CATCH	B.C. COAST		CN,EF,REL, SPP.,GEAR	LOGBOOK	DAILY	1979-84	TAPE, HC	DFO,FSB	FOR ALL SALMON, LINGCOD,ROCKFISH, SHELLFISH
CAN	SPORTFISH CATCH	B.C. COAST		CN,EF,REL SPP.,GEAR	QUESTION-NAIRE	ANNUAL	1982-84	TAPE, HC	DFO,RPEB	FOR ALL SALMON, LINGCOD,ROCKFISH, SHELLFISH
SEABIRDS AND MAMMALS TIME SERIES:										
USA	BREEDING FUR SEALS	PRIBILOF ISLANDS		NO.,SEX, TERRITORIAL MALES,OTHER MALES, SEX RATIO		ANNUAL	1786-1984	CDB	NMML	EARLIER OBSERVATIONS INCLUDE FEWER DETAILS; SOME GAPS IN THE RECORD EXIST
USA	PELAGIC FUR SEALS	BERING SEA SOUTH TO 32°N		SIGHTINGS (NO) BIO SAMPLE (FOOD,SIZE, SEX)		ANNUAL	1958-74	CDB	NMML	

TABLE 2 (CONT'D)

COUN-TRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	PELAGIC BIRDS	PAPA/ HECATE ST		SPP	OBSERVER LOGBOOK	QUARTERLY	1974-84	HC	CWS	
CAN	BIRD PREDATION	TRIANGLE, LUCY + PINE IS, B.C.		CW,CN,L, FISH SPP,	FIELD OBSERVATION	JUN-AUG	1976-84	HC	CWS	SAMPLE IN SEABIRD BREEDING SEASON
CAN	SEAL BIOLOGY	B.C. COAST		NO,WT,L, AGE,SEX, W,T	RESEARCH CRUISE	NOV-JUN	1958-74	TAPE	DFO,PBS	SOME DATA FROM AREAS IN CALIF. AND ALASKA
CAN	SEA LION SIGHTINGS	B.C. COAST		NO,AGE, SPP	RESEARCH CRUISE/ LOGBOOK	VARIOUS	1892-84	TAPE, HC	DFO,PBS	SPP = STELLER AND CALIFORNIAN
CAN	WHALE SIGHT + KILL	NORTH VANCOUVER IS, B.C.		WT,CN,L, AGE,SPP, FISHING DAYS	LANDING STATS/ LOGBOOK/ CATCH SAMPLING	JUN-AUG	1948-1967	FIELD NOTES	DFO,PBS	SPP = HUMPBACK,SEI, BLUE,SPERM + FIN
CAN	KILLER WHALE SIGHTINGS	B.C. COAST		AGE,SEX	RESEARCH CRUISE	JUL-AUG	1973-84	TAPE	DFO,PBS	SOME SIGHTINGS IN WASHINGTON
MISCELLANEOUS:										
CAN	FAUNA + ALGAE	ST OF GEORGIA	(49°N,122°30'W)	SPP	TRANSECT SURVEY	VARIOUS	1972-78	TAPE,HC	BMS	BENTHIC BIOTA (HARD SUBSTRATES)

TABLE 2 (CONT'D)

COUNTRY	STATION OR DATA SERIES	GENERAL AREA	LAT. LONG.	TYPE OF OBS.	SAMPLE METHOD	SAMPLING FREQ.	PERIOD OF RECORD	DATA FORMAT	DATA SOURCE	REMARKS
CAN	FAUNA + ALGAE	BARKLEY SOUND	(49°N,125°W)	SPP,WT,NO, L,T,D,W,POP	TRANSECT SURVEY	VARIOUS	1969-84	HC	BMS	BENTHIC + PELAGIC BIOTA INTER + SUBTIDAL
CAN	OCEAN DUMPING SITES	B.C. COAST		TYPE OF, ORIGIN + AMOUNT OF MATERIAL, LOCATION	DUMPSITE SUMMARIES	N/A	1940-82	HC	EPS, ENVIRON. CANADA	
CAN	PROV. MUSEUM RECORDS	B.C. COAST		SPP	CATCH SAMPLING/ RESEARCH CRUISE	VARIOUS	1889-1984	HC	BC PROV. MUSEUM	FISH AND INVERT. NONCOMMERCIAL SPP COLLECTED
CAN	PACIF. RIM NATIONAL PARK,MARINE INVENTORY	VANCOUVER ISLAND WEST COAST		D,TIDE, WD,T,S, SPP.	BIO-PHYSICAL SURVEY	N/A	1975-1980	HC	DFO,PBS	SPP = SEABIRDS, MARINE MAMMALS, FISH + CRUSTACEA
CAN	PISCES IV SUBMERSIBLE DIVES	B.C. COAST		DIVE LOC-ATION,DEPTH, SUBSTRATE, FAUNA	LOGBOOK	N/A	1973-82	HC	EPS, ENVIRON. CANADA	EIA OF MAJOR INDUSTRIAL ACTIVITIES IN B.C.

Table 3. Addresses of institutions from which time series information in Table 2 may be obtained.

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1. Alaska Department of Fish and Game
   333 Raspberry Road
   Anchorage, AK 99502-2392 USA

2. Alaska Department of Fish and Game
   P. O. Box 669
   Cordova, AK 99574-0669

3. Alaska Department of Fish and Game
   Island Center Building
   P. O. Box 20
   Douglas, AK 99824

4. Alaska Department of Fish and Game
   211 Mission Road
   Kodiak, AK 99615

5. Bamfield Marine Station
   Bamfield, B.C., V0R 1B0

6. College of Oceanography
   Oregon State University
   Corvallis, Oregon 97331

7. Commercial Fisheries Entry Commission
   State of Alaska
   Pouch KB
   Juneau, AK 99811 USA

8. Department of Fisheries and Oceans
   1090 West Pender Street
   Vancouver, B.C., V6E

9. Department of Fisheries and Oceans
   Institute of Ocean Sciences
   P. O. Box 6000
   9860 West Saanich Road
   Sidney, B.C. V8L 4B2

10. Department of Fisheries and Oceans
    Pacific Biological Station
    Nanaimo, B.C. V9R 5K6

11. Environment Canada
    1560 - 800 Burrard Street
    Vancouver, B.C. V6Z 2G7

Table 3 (Cont'd)

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12. Environmental and Technical Services Division
National Marine Fisheries Service
847 NE 19th Ave., Suite 350
Portland, OR 97232-2279

13. Institute of Marine Science
University of Alaska
Fairbanks, AK 99701

14. International North Pacific Fisheries Commission
6640 Northwest Marine Drive
Vancouver, B.C. V6T 1X2

15. International Pacific Halibut Commission
P. O. Box 95009
Seattle, WA 98145-2009

16. Kodiak Facility
Northwest and Alaska Fisheries Center
National Marine Fisheries Service
P. O. Box 1638
Kodiak, AK

17. National Marine Fisheries Service
Southwest Fisheries Center
Pacific Environmental Group
Monterey, California 93940

18. NOAA, National Weather Service
Washington, D.C. 20233

19. NOAA, National Environmental Satellite Data and Information Service
National Oceonagraphic Data Center
Washington, D.C. 20235

20. NOAA, National Ocean Service
Rockville, Maryland 20852

21. Northwest and Alaska Fisheries Center
National Marine Fisheries Service
7600 Sand Point Way NE, Building 4
Bin C15700
Seattle, WA 98115

22. Oregon Department of Fish and Wildlife
17330 SE Evelyn Street
Clackamas, OR 97015

Table 3 (Cont'd)

23. Oregon Department of Fish and Wildlife
Research and Development Section
303 Extension Hall, OSU
Corvallis, OR 97331

24. Oregon Department of Fish and Wildlife
Marine Science Dr. Bldg. 3
Newport, OR 97365

25. Oregon Department of Fish and Wildlife
P. O. Box 268
Madras, OR 97741

26. Oregon Department of Fish and Wildlife
506 SW Mill Street
P. O. Box 3503
Portland, OR 97208

27. Pacific Fishery Information Network
Pacific Marine Fisheries Commission
528 SW Mill Street
Portland, OR 97201

28. Province of British Columbia
Provincial Museum
Victoria, B.C. V85 1X4

29. Scripps Institution of Oceanography
La Jolla, CA 92093

30. U.S. Army Corps of Engineers
North Pacific Division
P. O. Box 2870
Portland, OR 97208

31. U.S. Fish and Wildlife Service
National Fisheries Research Center
Building 204, Naval Station
Seattle, WA 98115-5007

32. Washington Department of Fisheries
7600 Sand Point Way NE, Building 4
Bin C15700
Seattle, WA 98115